COAL AGE

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Coal, Railroads and the Government

NOW that there seems to be a strong indication that the five-year extension of Government operation of the railroads will become a reality, a problem of great significance confronts the coal industry as a whole. During the war period, the attitude of the operators and middlemen (however they may have designated themselves) was one of patriotic resignation of personal interests to the national welfare. Competition was succeeded by a generous cooperation in all national policies. Furthermore, the demand for fuel so exceeded the supply in those strenuous days, that the sole anxiety of both producer and distributor was simply to increase production.

With the hectic days of war over and the first steps in the nation's reconstruction program being taken tentatively, the coal industry must watch and prepare itself for such a peculiar situation as the probable five-year extension of Government operation of the railroads is certain to bring about.

Whether Government operation of the railroads will prove advantageous to the country or not is not pertinent to the present discussion. What is of considerable importance, however, is how it will affect the coal industry. The railroads are the largest individual consumers of coal, and they have always been catered to because of their enormous consumption. In a certain sense they have been the barometer of the coal trade as the steel business is of the country's whole industrial life. Now that these large individual customers are about to be welded into one gigantic customer, with a purchasing power that can shape the destiny of the coal industry as surely as if it were a majority stockholder, how prepared is the coal industry to adjust itself to this new situation?

Do the policies which all producers (and particularly those mining locomotive fuel) are laying down for future business expansion include a careful consideration of the potential part that the Government may play? Any sort of stability and any return to the prewar basis of doing business in the coal industry is out of the question until the Government's action in the matter of the railroads and its attitude toward the coal trade are definitely settled and outlined. The new order of things is bound to alter and destroy many of the established relations and customs of the trade.

Perhaps those who have most cause for alarm are the middlemen. Will their functions and services be entirely eliminated by the Government when purchasing coal for the railroads? This gives rise to several other germane questions: Will the Government continue to employ the regional purchasing committee plan in supplying the railroads with their fuel requirements, as it has signified its intention of doing, or will it at some not far distant date have the purchasing done by a central committee for all the railroads? Will prices be hammered down by the mailed fist of concentrated buying until the margin of profit is so reduced that invested capital will no longer be interested in coal mining?

All this, of course, as already intimated, applies principally to producers of the locomotive grades of coal. Producers of the steam grades will not be so materially affected, though they are certain to meet keener competition in that many producers of the locomotive grades will branch out into their field, where investments will be more remunerative.

If producers feel that they can dispose of their product in foreign markets to better advantage than at home, and can secure this foreign business, will the Government restrict the export of those grades of coal which it requires? Is it not possible that Government ownership may be extended to the coal mines within a short time, particularly to those mines which will be called upon to supply the railroads?

Regarding the situation of the New England railroads, will the Government retain enough boats of its Emergency Fleet to move the coal from the Southern fields to the New England ports? Or will it endeavor to supply its New England requirements by rail, to the detriment of all other New England coal consumers who will be obliged to take tide shipments?

The problem is so vast and so full of possibilities that the further one dips into it the greater it seems to become; and one soon is lost in a vortex of questions and still more questions. These, however, must all be given due attention, and the sooner the trade realizes this and makes ready to meet and solve each question as it arises the less panicky will be the work of reconstruction and adjustment. Foreign trade looms up as a solution to many a vexatious difficulty, and it is certain that the United States will in the next few years make tremendous strides in the conquest of foreign markets. How will this affect the coal industry?

Readers of COAL AGE are invited to discuss the matters touched on in the foregoing article, as upon the proper answers to the questions asked rests in a great measure the future prosperity of a great part of our industry.

IDEAS AND SUGGESTIONS

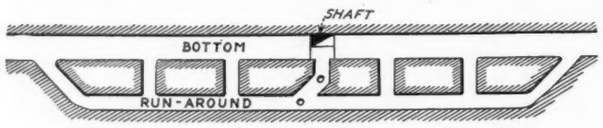
Sump-Cleaning Tunnel Proves Successful in Several Illinois Mines

BY H. GOODNOW
DuQuoin, Ill.

Cleaning coal out of the sump at the shaft bottom is a job for which there is ordinarily little competition, since this work combines a maximum of work with a minimum of comfort. More serious than this, however, are the frequent delays to hoisting arising from a car running into the sump or from reckless hoisting prematurely filling up the sump with spillage until the cage cannot land.

In order to provide easy access to the sump for the quick loading out of spilled coal, a tunnel driven from the run-around to the sump bottom and large enough to pass a car has proved a big success at several Illinois mines.

To secure a good grade and curve it has been found advisable to start in the run-around at such a point



METHOD OF BUILDING TUNNEL FROM SUMP

that a 45-deg. slant will come opposite the sump in the center of the pillar, from which place the tunnel may be driven straight for the sump bottom. After a little grading a track can be laid and a car passed through this tunnel to the bottom of the sump and loaded at any time. A locomotive in the run-around can then easily pull this car out with the aid of a short cable.

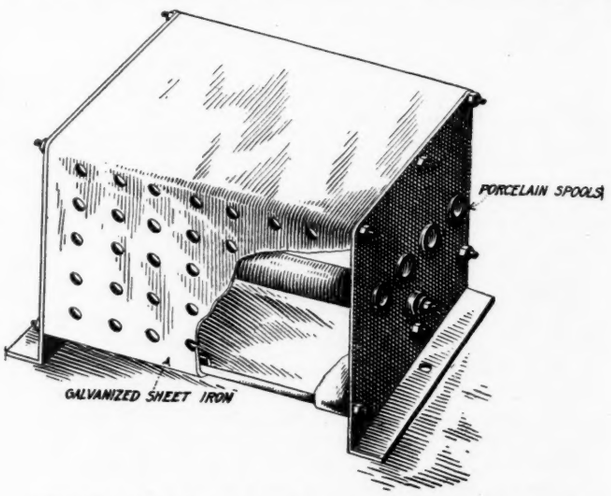
At one southern Illinois mine such a tunnel saves 16 hours' work each night. It has also enabled the cleaning up of a wreck, when two loaded cars had gone into the sump, to be accomplished in 6 min. To do this a chain on the bottom of the cage was used to turn the cars over and empty them, after which they were raised and swung to their place on the track. In the meantime two cars in the sump-cleaning tunnel were loaded out and the mine resumed hoisting in what was really record time.

Automobile Headlight Proves Serviceable for Use on Mine Locomotives

BY J. J. NOLAN
Linton, Ind.

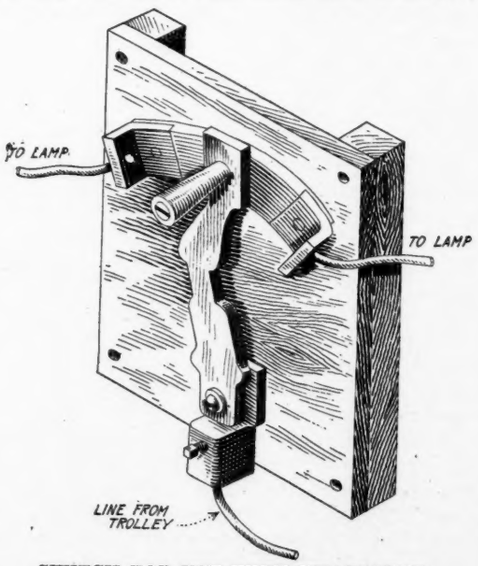
The illustrations shown herewith are of a locomotive headlight, resistance and switch that has been placed in service on more than thirty locomotives in sixteen mines belonging to the largest coal company in Indiana. These changes were made after the upkeep of carbon filament and luminous arc lamps for locomotive use had been found excessive due to the rough treatment given them.

After completing the lamp proper (which is one used on a popular make of automobile), the question of the proper size of wires, length, etc., that would carry the current safely received attention. The length finally adopted and the size and ohms per 1000 ft. (using a 6- to 8-volt, 2.5-amp. bulb on a 250-volt circuit) are



DETAILS OF RESISTANCE USED WITH HEADLIGHT

as follows: Size, 0.025 in.; number of feet, 110; ohms per 1000 ft. 820. This was found to carry the necessary amperage, as the lamps were tested for 300 hour continuously, the same bulb being used without change.



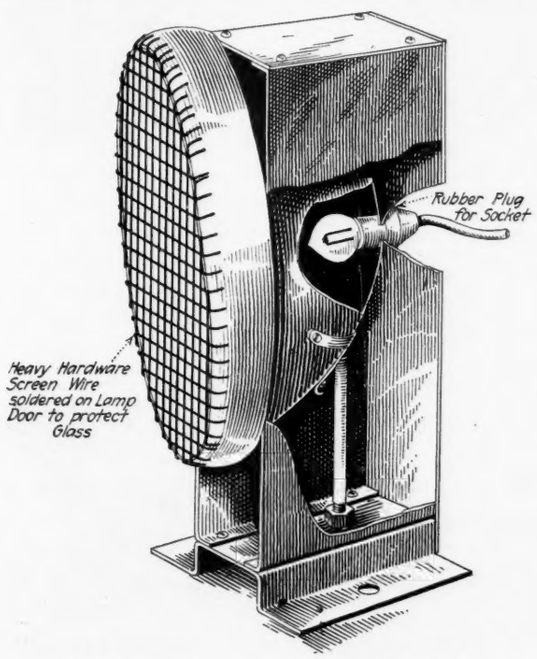
SWITCH FOR USE WITH HEADLIGHT

To use the lamps in series would have required less resistance; but being on series would mean to burn the lamps on both ends of the locomotive at the same time instead of only one when it was needed.

The base of the lamp is of a suitable size, and it is drilled to fit the threaded holes in the locomotive frame

that formerly held the common arc or luminous arc lamps. Two $\frac{5}{8}$-in. holes on $10\frac{1}{2}$-in. centers were drilled in the base. The light given by the lamp is satisfactory when the drop in voltage is not too great. If kept clean, and in proper repair, the lamps give little or no trouble. Furthermore, when it becomes necessary to change certain parts the renewals can be made at comparatively little expense.

A lamp of higher voltage would have required less resistance, but the filament would have been lighter,



DETAILS OF COMPLETED HEADLIGHT

and due thereto the lamps would have been unable to withstand the heavy jars and higher voltages to which they are subjected near the shaft bottom or when in proximity to the source of power.

The resistance requires a space $9\frac{1}{8}$ x $7\frac{1}{8}$ x $4\frac{1}{2}$ in. The resistance tubes, which are of porcelain threaded on the outside and measure $7\frac{1}{2}$ in. in length, can be procured from a well-known firm that manufactures resistances for various purposes. The porcelain bushing and terminal or binding post can be secured from the same firm. A durable switch that will answer the purpose may be made from spare parts of mining-machine contacts and brushes, or from fingers mounted on a fiber base. This material can be found in almost any mine repair shop.

Observations of an Old Trackman on the Proper Driving of Spikes*

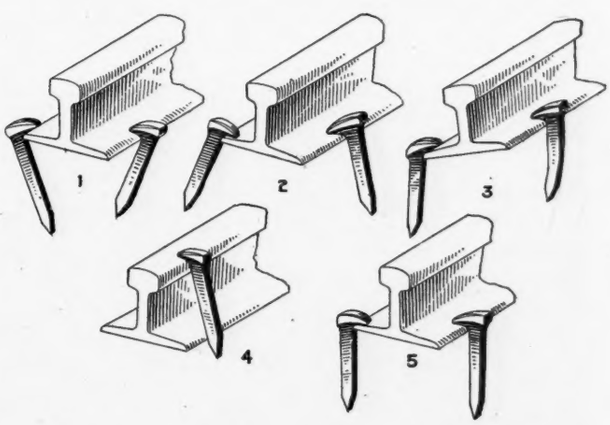
In my younger days I often watched mine trackmen lay switches and straight track, and it was really amusing to see how they distorted the spikes in driving them. Fig. 1 shows the manner in which spikes are often driven. One trackman assured me that he drove the spikes in that manner so as to keep the rail down on each edge. This is a poor way to drive a spike, as it is not so tenacious as when driven straight, and the head is likely to be broken off. Fig. 2 shows where the spikes were driven slanting. When the head got down to the rail base only the edge of the head touched the rail. This also is a poor method.

Fig. 3 shows a rail that is sprung. Here the trackman drove the first spike down, then drove the second spike and bent it before it was half driven, in order that the whole of the head might have a bearing on the rail. When the spike gets down to the base, the trackman gives several heavy blows, seeking to "pull the rail down." This invariably pulls the head off the strike and is obviously a poor method. Fig. 4 shows a spike started too close to the head of the rail. As the spike is driven past the rail head it is bent and weakened. It is likely to bend in against the web of the rail after which, of course, it is useless. It must be pulled out and another put in.

Fig. 5 shows spikes driven correctly. It will be noticed that the spikes are started perpendicularly. In consequence the head of the spike has a full bearing on the base of the rail.

Very few trackmen notice it, but a careful observation of a spike will reveal the fact that its head is sloping on the under side, and when the spike is driven tight the entire length of the head will fit into the contour of the rail at the point of contact.

On account of the present high cost of material, we should exercise great care in the driving of spikes. They are not only expensive, but at times it is practically impossible to get them. The waste in spikes is enormous. It often makes a man ask: "Where do they



FIGS. 1 TO 5. DIFFERENT METHODS OF DRIVING SPIKES

all go?" I believe that if they were driven straight in the first operation and handled with a little care we could recover twice as many as we do.

Look about your track in the rooms and headings, and notice the freakish appearance of things that once were spikes, and observe what the chances are for their being reclaimed, and you will never ask anybody again "Where do the spikes all go and why?"

*From *Our Own People*, Davis Coal and Coke Co. publication, January number.

Nearly nine-tenths of the total estimated coal deposits of the United States, or about 3,550,000,000,000 tons, are stated to lie at a depth not exceeding 3000 ft. below the surface.

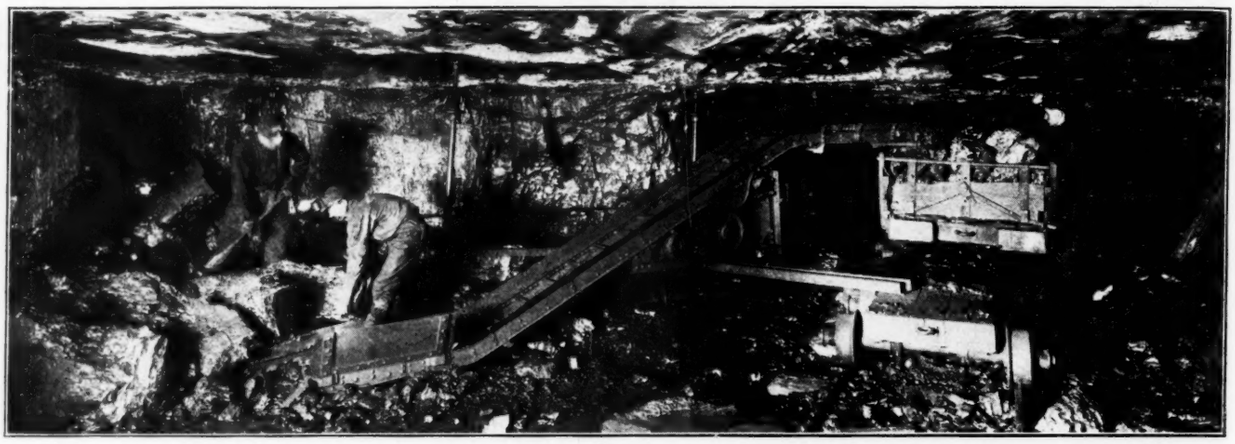


FIG. 1. COAL-LOADING MACHINE THAT DOES AWAY WITH DOUBLE SHOVELING AND COAL CARRYING

Mining Coal by Machinery

By N. D. LEVIN
Columbus, Ohio

SYNOPSIS — *Many attempts have been made to load mine cars with coal from the face by machinery. In order to obtain the best results from such equipment it is necessary to lay out the mine in such a way as to adapt it to operation by means of such machines. Then and only then will the best results be obtained.*

MUCH money and effort have been expended in past years in an attempt to load coal by means of machinery. Nevertheless an insignificant percentage of the coal mined is handled by loading machines; more than 99 per cent. is still loaded by shovel. The reason for this is that in many mines there exist unfavorable conditions, which may be enumerated as follows: A vein that is too low; the roof may be poor, and there may be dirt seams in the coal; roomnecks are narrow; not enough coal is obtained from each room; coal cannot be shot down on the floor in shape for the machine to pick up without breaking to such an extent as to seriously reduce the percentage of lump; conditions may be such that empty cars cannot be supplied without causing delay to the machine.

The machine shown in Fig. 1 has been developed with the end in view of using it in mines having conditions like those mentioned. This machine is light (it weighs about one ton), can be handled by one man if necessary, but more conveniently by two. It can be made for almost any height of bed, provided there is sufficient room between the top of the car and the roof for the lumps to pass.

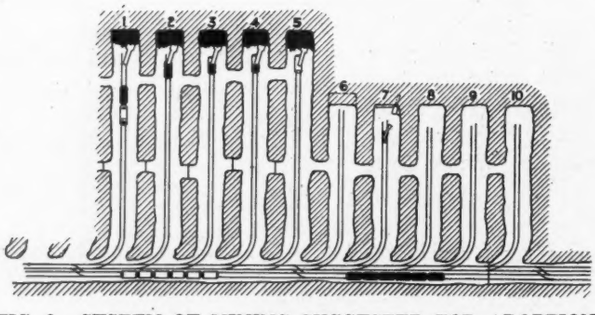


FIG. 2. SYSTEM OF MINING SUGGESTED FOR ADOPTION WITH COAL-LOADING MACHINES

FIG. 3. DRILL MOUNTED ON TRUCK CAN BE MOVED TO ANY PART OF FACE BY ONE MAN

The machine does not pick up the coal from the floor. Where the shooting is done during working hours, it saves work to shoot the coal directly onto the loader, and thus several tons often can be obtained without any shoveling whatever. The coal can also be pulled down from the face directly onto the loader, and large lumps rolled on, eliminating some work in breaking up, and at the same time giving better lump coal. If this machine is used in a systematic manner, the regular output of the mine can be obtained from a greatly reduced mining territory.

Following is an example of a mining system which may be employed where conditions are suitable, and something along similar lines may be worked out for other conditions. The assumptions are: Height of coal, 6 ft.; width of rooms, 20 ft.; undercut, 7 ft.; capacity of mine cars, 4 tons. It is preferable to have the track in the center of the rooms. A mine car of 4 tons capacity is, of course, larger than is found in most mines, but it is recommended that large cars be used with loading machines in order to facilitate the gathering. There are assumed to be 10 rooms in the system.

Referring to Fig. 2, five rooms—Nos. 1, 2, 3, 4 and 5—have the coal shot down, and a loading machine in each. There are two men with each machine. Rooms 6 to 10 are being undercut and drilled. It is assumed that the shooting is done during working hours and the coal is not shot down until the loading machine is in position. There being ten rooms in the system, rooms 6 to 10 would be undercut and drilled, say in the forenoon, and rooms 1 to 5 would be undercut and drilled in the afternoon.

From each room undercut there would be obtained about 34 tons of coal. It is found that two men can readily load this amount in 4 hours with the assistance of the machine; therefore, rooms 1 to 5 would be loaded in half a shift, while the other rooms are being prepared.

The machines are then moved, and rooms 6 to 10 are loaded out in the other half shift. It will be noted that the ten rooms would give about the right amount of work to keep two men with a shortwall machine busy undercutting. It would also keep a gathering locomotive busy handling the cars for the five pairs of loaders. The cars being large, there would be only nine cars required from each room, or 90 cars per shift. It should not be much trouble for a gathering locomotive to bring in the requisite number of empties expeditiously to the five loading machines.

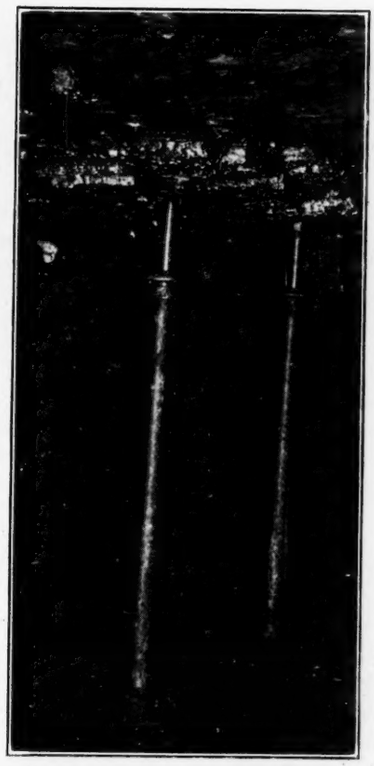


FIG. 4. PIPE SCREW POSTS

If the cars were smaller, there would be some question as to one gathering locomotive being able to serve all the loading machines promptly. We may go further; if the cars were, say, only one-ton capacity, I do not think it would be possible by means of any system to handle the cars so that the machines would not be delayed; therefore I mention this, because the importance of large cars has not been fully appreciated in the past where loading machines have been tried.

Figs. 3 and 6 show a drill mounted on a truck in such a manner that it is never necessary to detach it therefrom. It is suspended on a double hinged arm so that it can be moved to any part of the face by one man, without any heavy lifting. By means of this equipment one man could do all the drilling and assist in cleaning up, timbering, and other like work.

It is also important that the track be laid in the rooms before the machines are moved in. Sections of track of convenient lengths should be made up permanently, complete with steel ties, and have a fishplate connection so that all that is necessary is to drop the sections into place. About three sections, each the third of a length of rail, should be a permanent fixture for each room. When the third section has been used, all three will be taken up and replaced by a length of rail. In this manner it will only take a few minutes to extend the track, and this would not delay the machines.

Unless the roof is exceptionally good, there should

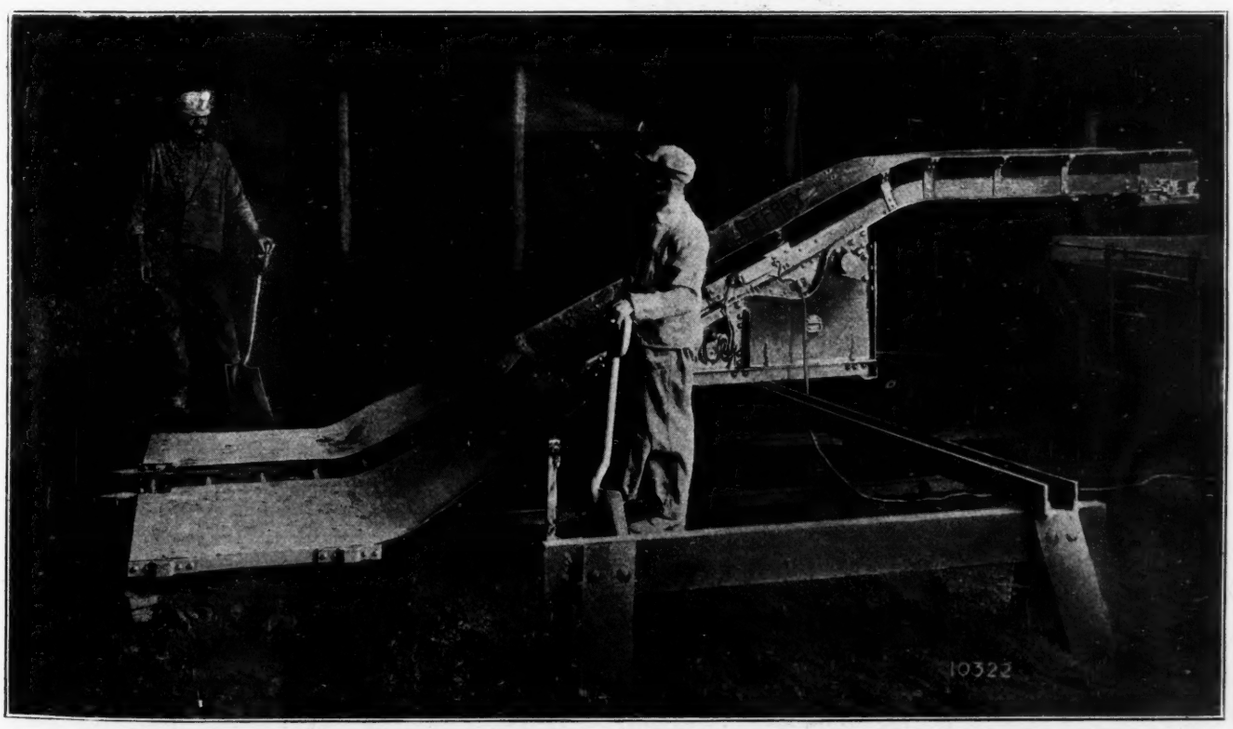


FIG. 5. TWO MEN ONLY ARE REQUIRED TO MANIPULATE THIS EASILY PORTABLE COAL-LOADING MACHINE

also be provided as permanent equipment for each room a few pipe-screw posts such as shown in Fig. 4. A post like this can be set in a fraction of a minute, whereas it often takes 15 min. or more to go and hunt up a wooden post and set it; and if the men have to go and hunt up an ax and cut the post to length, it may take half an hour.

To make a success of loading machines in a mine, every precaution must be taken to keep the machines working. If such precautions are not taken, the machines will be idle a great part of the time. If a miner is simply given a machine, he will spend more than half of the time in drilling, shooting, cleaning up, setting posts, laying track, taking up bottom and "fixing" his carbide lamp. These things should be done for him.

The last item, "fixing his carbide lamp," may seem to some as hardly worth mentioning; but if the time lost due to carbide lamps was figured up on the five loading machines, I believe it would be found to amount

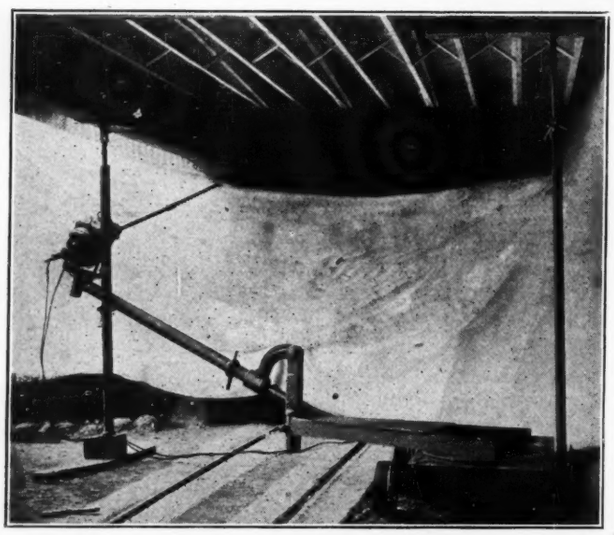


FIG. 6. SHOWING MANNER IN WHICH DRILL IS ADJUSTED FROM TRUCK

to considerable. It would, I believe, be a good idea to put in electric lights so that the men could work without their carbide lamps. There is power in the room already. Wire should be extended in the rooms from time to time so that it would not be necessary to unreel a cable and hook on in the entry three times a day, as in each day three kinds of machines are used in each room —that is, the undercutting machine, drill and loader.

Each of these ten rooms is loaded out once a shift. A 7-ft. cut in the size of room assumed will give 34 tons, or about 340 tons per shift from the ten rooms. This, it will be realized, is a good output from a small territory, and should mean a great saving in material, ventilation and upkeep of the mine.

As to the cost of the coal, this would have to be figured up for each mine, taking the conditions and labor scale into consideration. As to the number of laborers, there would be required 10 men for loading, 2 men for the shortwall machine, 1 or 2 men for the gathering locomotive and 1 man for drilling. This latter can also help lay track and assist with the timbering. In the same room with the man drilling another will probably be needed for taking up bottom and getting the room in proper shape.

Output per Underground Employee in British Coal Mines Decreases

The shortage of fuel is seriously felt throughout Great Britain, due in large part to scarcity of labor, great numbers of men having been withdrawn from mining operations during the last four years. But there is another factor of equal importance and of even greater significance which influences this matter, and that is the continual decline in output per person employed. According to R. W. Corless, in an address to the Past and Present Mining Students' Association, Wigan, and District Mining and Technical College, on Nov. 16, 1918, it does not seem that enough has been done to improve the individual output.

The accompanying table gives the returns for the years 1907 and 1917, from which comparisons may be made; the figures are arranged to show the output in tons per annum per person employed underground without taking any account of surface employees. Taking the average output, the loss of output per person in the 10 years is 47.2 tons; the number of persons employed

	Year, 1907			Year, 1917		
Section	No. of Persons Underground	Output	Output per Head	No. of Persons Underground	Output	Output per Head
Scotland.....	101,766	40,092,548	394	102,205	34,245,744	335
Northern.....	161,038	56,243,456	355	152,068	43,228,230	284
York and North Midland.....	.....	.....	.....	192,040	69,128,836	360
Lancashire and North Wales..	87,371	30,034,598	344	89,512	25,204,560	282
South Wales....	121,351	36,782,508	303	184,633	48,507,902	263
Midland and Southern.....	.....	.....	.....	90,397	28,062,201	310
	471,526	163,153,110	353.4 Average	810,855	248,377,473	306.2 Average

underground in the year 1917 is 811,510, and multiplying the total number of employees by 47.2 (the loss of output) we obtain 38,303,272 tons, or the total amount of coal lost through decreased individual tonnage.

The question—How are these figures going to be improved—has arisen. In recent years machinery has been brought more and more into use, particularly in undercutting the coal and in conveying the coal along the face, but Mr. Corless considers that they still lag a long way behind. Cases are continually met where output is sacrificed for want of power to replace manual labor. The hard seam of coal is still being undercut by hand, rock tunnels are still being driven by hand work, and the need of an auxiliary haulage system is felt to keep pace with advancing roads and to dispense with such old relics as crabs and similar devices.

Mr. Corless states there is not much doubt that, next to the actual cost of mining, the cost of transporting the coal from the face to the haulage road is one of the most expensive items in underground work; and this is perhaps one of the most laborious kinds of mining work, especially in those collieries where the gradient is fairly steep or the haulage roads are too few.

Following an explosion at a mine an experienced mechanic should at all times during the recovery work be stationed at the fan, prepared to make any necessary repairs following a breakdown. A messenger familiar with the plan of the mine should be constantly on duty to carry word into the mine in case the fan stops. If a telephone line has been installed, a man should be on duty constantly at each telephone.

Cleveland Coal Situation in 1918

By EDWIN C. BOEHRINGER
Cleveland, Ohio

SYNOPSIS—*Though supply of bituminous was never plentiful in the early part of the year, no essential war plants lost any time. Demand continued strong until Nov. 11, when the armistice was signed. Anthracite practically disappeared from the market, due to the operation of the zoning system. Pooling of coal through the Ore and Coal Exchange proved an unqualified success, and the likelihood is that the plan will be adhered to in a modified form. Opinions differ as to the outlook for the new year.*

WERE 1918 to be charted from a coal standpoint, demand would show an almost unbroken line across the 10½ months to Nov. 15, with a sharp decline downward from then to Dec. 31. Prices would show a slight decline from Jan. 1 to Apr. 1, a decided drop on that date, and remain on much the same level the remainder of the year, with a possible faint falling off from Nov. 15 to Dec. 31. Thus are revealed the principal trends of the bituminous year in Cleveland and northern Ohio.

The early months of the year strained the trade to the utmost. An unusually cold January and February, which called for greatly increased consumption, by the same token laid a heavy hand upon the railroads and cut down the supply in much the same proportion that demand rose. This situation was further complicated by the unusual requirements of the iron and steel, metal-working and rubber industries of Cleveland and northern Ohio—then very largely engaged in war work.

Doubtless the apprehension felt was heightened by the comparison of receipts then with former years. Steam-coal traveled the direct route from car to fireroom. Domestic coal was delivered in 100-lb. and 200-lb. lots instead of by the ton. But when the winter's hold was broken, it was found that no essential war plant had lost one minute's time through shortage of coal, nor did one home actually lack an immediate supply for one day. The margin, while dangerously narrow, sufficed at all times, and in fact some No. 8 coal was being dumped into Great Lakes freighters at Cleveland in March.

The winter over, efforts of the trade were concentrated on getting to the Northwest its allotment of 28,000,000 tons of bituminous. All summer long every ton of bituminous, including that from stripping and exceedingly low-grade operations, was quickly absorbed. Pressure from the United States Fuel Administration on both steam-coal and domestic consumers was applied, and not only did the Northwest get its 28,000,000 tons and more, but the entire lower lakes region was amply coaled when winter again broke.

Until Nov. 1 domestic demand continued unabated, and while new business was comparatively small, deferred orders were yet to be cared for. Retail dealers, in effect, did a winter business all summer. The unusually mild weather through October, November and December knocked the bottom entirely out of the domestic market and easily offset the more prosperous summer business. With the signing of the armistice Nov. 11, steam-coal demand fell as though it had been cut off with an ax. War work did not let up immediately, but industrials bent every effort toward depleting their war-priced, abnormal stock piles. The end of November saw overproduction just in the offing, and the first half of December found the market utterly stagnant. This was the condition when 1918 passed away, and demands for both domestic and steam coals were on rock bottom.

The beginning of 1918 saw bituminous still being delivered at contract prices. The Government maximums, strictly speaking, had little real effect here until Apr. 1, when prices dropped probably 65c. a ton on the average. Until the middle of November bituminous prices held firm at the Government maximums. Then, with standard No. 8 available, stripping coal softened, and soon was being offered at as much as 70c. off. Some stripping coal in middle December went at 90c. off. On the theory that reduced prices would not stimulate demand, the larger No. 8 operators held firm for the Government maximums. Some regular No. 8 coal was disposed of in December at about 25c. off the maximums—which for Ohio generally were $2.35 for mine run, and $2.60 for slack and prepared sizes. Domestic grades in December were bringing, delivered, $7.10 for Massillon lump, $6.60 for Coshocton, $6.35 for No. 8 Pittsburgh and $6.15 for West Virginia splint. These prices were from 50 to 75c. under the prices that ruled in the summer. The quality of domestic coal was quite poor throughout the year, and not until November were buyers given 1¼-in. lump instead of ¾-inch.

As a market factor, anthracite virtually disappeared. Operation of the zoning system kept out throughout the year about 75 per cent. of the normal supply. In December anthracite was bringing $10.35 in Cleveland, about $1 a ton higher than in the spring. Coke was pushed as a substitute, at from $11.50 to $14 a ton. It proved a poor, high-priced substitute, and the re-

COMPARATIVE MOVEMENT OF BITUMINOUS AND ANTHRACITE COAL ON GREAT LAKES

Season	Bituminous, Net Tons	Anthracite, Net Tons	Total, Net Tons
1918	28,153,317	3,948,705	32,102,022
1917	26,828,759	4,689,983	31,518,742
1916	24,369,000	4,423,800	28,792,800
1915	22,420,000	3,800,000	26,220,000
1914	22,995,000	4,285,228	27,280,228
1913	28,328,683	5,033,696	33,362,379
1912	23,335,000	4,204,741	27,539,741
1911	21,782,685	3,917,419	25,700,104
1910	22,838,700	3,639,368	26,478,068
1909	15,564,690	3,052,706	18,617,396
1908	15,750,000	3,538,098	19,288,098
1907	18,037,232	3,449,695	21,486,927
1906	14,591,910	2,681,808	17,273,718
1905	11,615,837	2,785,362	14,401,199

BITUMINOUS COAL HANDLED BY LAKE ERIE DOCKS IN SEASON OF 1918

(Vessel Fuel, Which Is Included in the Following Figures, Given in Net Tons, Amounted to 1,234,925 Tons for the Season)

City	Railroad Dock	April	May	June	July	August	September	October	November	Season
Toledo	Baltimore & Ohio	3,399	263,130	302,686	439,290	578,745	593,545	585,171	259,092	3,025,058
Toledo	Hocking Valley	74,132	533,422	603,706	788,258	883,922	820,943	885,767	545,638	5,135,788
Toledo	Toledo & Ohio Central	58,523	278,555	305,470	286,182	373,423	340,154	359,637	175,967	2,177,911
Sandusky	Pennsylvania	46,031	300,663	376,742	265,480	388,627	431,106	456,501	183,107	2,448,257
Huron	Wabash & Lake Erie	*107,861	259,106	288,568	312,320	373,703	323,730	332,390	172,049	2,169,727
Lorain	Baltimore & Ohio	*724,967	341,897	343,674	450,408	583,224	608,187	585,402	397,235	3,434,994
Cleveland	Erie	84,276	88,759	68,519	66,313	93,414	102,199	135,007	54,649	693,136
Cleveland	Pennsylvania	*118,884	307,477	352,406	464,621	436,026	449,889	438,404	272,670	2,840,377
Fairport	Baltimore & Ohio	744	4,886	8,608	62,417	56,276	50,520	91,734	42,339	317,584
Ashtabula	New York Central	34,129	270,727	272,419	300,661	460,367	361,149	304,758	161,378	2,165,588
Ashtabula	Pennsylvania	88,578	164,003	175,347	237,405	163,713	261,841	324,304	118,269	1,533,460
Conneaut	Bessemer & Lake Erie	*134,994	289,488	300,733	313,120	388,449	333,251	334,026	151,831	2,245,892
Erie	Pennsylvania West	*14,528	92,085	83,759	130,587	137,011	85,675	110,038	65,238	718,921
Erie	Pennsylvania East	.....	.....	56,715	117,243	80,030	89,009	100,748	37,804	481,549
Total		891,046	3,194,198	3,539,352	4,234,305	4,996,930	4,851,198	5,043,887	2,637,326	29,388,242

*Includes total of 22,193 tons dumped prior to beginning of season and operation of Ore and Coal Exchange.

turn of anthracite and Pocahontas will probably push it almost entirely out of the domestic market.

Pooling of cargo and coal tonnages through the Ore and Coal Exchange of Cleveland made the lake season an unqualified success. Though only August, October and November equaled or exceeded the monthly quota set by the Fuel Administration, the Northwest was given 28,153,317 tons of bituminous, while Lake Erie car dumpers handled an additional 1,234,925 tons in the way of fuel coal. The season's grand total thus was 29,388,242 tons of bituminous. The cargo coal accorded the Northwest in 1917 was 26,828,957 tons, or 1,324,360 tons less than this year. Of the 1918 tonnage the three docks at Toledo handled 10,338,757 tons—combining cargo and fuel coal—Ashtabula's two docks 3,699,048, Cleveland's two 3,533,513, and Lorain's one 3,434,994 tons.

Bituminous Trade Pessimistic At Present

At present the bituminous trade is most pessimistic. With steam coal demand away off, domestic users still stocked and the lake season over, all of the elements loom up unfavorably. The bright spots in the way of nibbling by several large steam-coal users who have pretty well eaten into their stock piles are eclipsed by the general pessimism. This depression, it is believed, will largely be dissipated by the opening of the lake season, which is only 60 days in the future. Their backs put to the wall, the larger and better-informed operators appear 100 percenters—either very optimistic or very pessimistic. There appears to be mighty little middle ground.

One view, which is not widely shared, is that bituminous will fall into the same slough as after the 1902 anthracite strike, and that with war demand for fuel over, the market has changed from a seller's to a buyer's; that it will take the industry fully ten years to recover from its present state of overproduction. This view includes a crash not later than the early spring months, with No. 8 mine-run as low as $1.50 before the upturn.

The other view, more generally held, is that the industry will encounter nothing but boom times in 1919, beginning in late February or early March. The country, these operators believe, will rush through its readjustment; export demand will be big; with the discarding of zone restrictions, No. 8 coal will find its welcome as warm as ever in Michigan; next November and December can be no worse than those months this year, from the standpoint of domestic consumption; and that the Northwest usually takes from 27,000,000 to 28,000,000 tons.

Negotiations for a new bituminous wage scale are held certain to come some time in 1919, and the belief is universal that this will result in shutdowns at the mines for 30 to 45 days at a minimum. Ten per cent. of the year's production, accordingly, will be lost this way, and from this prices will not suffer in the least. With ratification of the peace treaty and consequent opening of the wage scale before April seemingly improbable, operators expect to begin floating lake coal again at $2.80. This, too, is expected to be a factor in maintaining present prices. Many operators advance the theory that the experience of large steam-coal users in stocking with low-grade and stripping coal, and their losses through fires, will serve to bring quality into the forefront at the expense of price. It is agreed on all sides that, in any event, prices cannot go down until labor does. If the wage negotiations are begun before living costs have receded, the mine workers will succeed to another year of high wages, with prices accordingly.

Forecast of Conditions for 1919

The forecast is for a late start in the lake trade next spring, for a large part of the Great Lakes fleet is wintering at Buffalo with storage grain cargoes. About two weeks will be clipped off the start, for navigation opens at Buffalo usually a fortnight or so later than at Toledo and Cleveland. The pool is likely to be continued, though in a modified form. It is certain that the 1919 pool, if any, will not permit the mixing of coal on upper lake docks such as resulted in 1918. Losses through fires have been too severe to leave this detail unnoticed. From 27,000,000 to 28,000,000 tons again will be taken up, with the former figure nearer correct. Dock piles on the upper lakes seem certain to be much larger in the spring than they were last spring.

The lake and domestic trade sizing up as normal or virtually so for 1919, the great uncertainty lies in the steam-coal situation, and this, naturally, will be no better or no worse than general business conditions. The worst, for the local trade, seems likely to be over by the middle of March. Prices only slightly lower than in 1918, with demand 85 to 90 per cent. of what it averaged through 1918, is the by and large of the trade's views here.

Coke Industry in 1918

By WARREN S. BLAUVELT
Detroit, Michigan

THE story of the coke industry in 1918 is an interesting chapter in the history of the Great War. It is a story of the rapid development of the spirit of patriotic coöperation of coke manufacturers, coke workers, railroad men and coke consumers with the War Industries Board and Fuel Administration. With this spirit actuating the industry and those connected therewith, difficulties which appeared insurmountable were largely overcome, and the coke industry was enabled to do its part in winning the war.

Production of coke was curtailed in January, February and March over 2,000,000 tons by weather conditions which prevented regular movement of coke from beehive ovens to furnaces, and of coal to byproduct ovens. The quick improvement in railroad conditions with the advent of milder weather was made possible only by the strenuous and effective work of all the men in the railroad service.

As production increased in May, June and July stocks of coke were accumulated at furnaces remote from the coke districts. Unfortunately, the extremely hot weather early in August again curtailed the output about 100,000 tons. Fortunately for the war program, the stocks previously accumulated made it possible to keep nearly all furnaces in blast during this period. In October and November, coke production was reduced about 350,000 tons by the influenza epidemic.

In the Connellsville region in West Virginia, Virginia, Kentucky and Tennessee there was an actual shortage of labor the greater part of the year. In Alabama there were apparently enough men to man the coke plants, but chronic absenteeism, and the habit of frequently moving from place to place, reduced the available coke labor far below war requirements. Unfortunately, the campaign to correct this difficulty was not started in Alabama till the latter part of the summer and was seriously hampered by the epidemic, which was general in the district. But notwithstanding the difficulties due to the weather, the influenza and the shortage of labor, the production of metallurgical coke in 1918 was about 1,000,000 tons greater than in 1917.

The new byproduct ovens which were started in 1918 made this increase possible. In the latter part of October, for the first time in this country, more byproduct than beehive coke was being produced. The productive capacity of the byproduct ovens in the United States has been increased about 36 per cent. during the year.

The activities of the Fuel Administration in connection with the coke industry were along the following lines: (1) Establishment of maximum prices. (2) Efforts to increase production. (3) Control of distribution. (4) Efforts to improve quality.

The basis of all price-fixing orders was the price recommended to the President by the committees of the American Iron and Steel Institute and the War Industries Board, and approved by him on Sept. 24, 1917. In general, the policy of the Fuel Administration in fixing prices was to establish maximum prices as low as practicable and yet secure the production required.

A price of $1 per ton more for foundry than for furnace coke was allowed on Nov. 10, 1917. This made the price ratio between furnace and foundry coke about the same as before the war. It also had the effect of making it possible for foundries engaged in war work to secure their coke generally without Government assistance, and this relieved the Fuel Administration of a vast amount of work which otherwise would have been necessary. This greatly expedited the production of castings needed in the war industries, as there were few delays from failure to secure foundry coke.

Prices for byproduct coke were allowed which permitted the absorption of freight differentials, thus leaving the price relation between beehive and byproduct coke essentially the same as before the war. Disregarding these two price differentials, the orders affecting prices permitted advances above the base price originally established, on a merchant tonnage of only about 4,250,000 tons of coke per year, or about 7½ per cent. of the total year's production of coke.

Efforts to secure an increased production were made: (1) With the Railroad Administration, to secure a regular and adequate car supply for the movement of coke and byproduct coal. (2) With operators, to secure their maximum effort to increase output. (3) With employees, to get them to work steadily. (4) With the Employment Service Bureau and with draft boards, to increase the available labor at coke plants. (5) To secure physicians and nurses where needed on account of the epidemic of influenza. (6) With the general public in the coke regions, to establish an effective public opinion, honoring those who worked faithfully to secure the coke needed for war purposes, and shaming the slackers.

In the control of distribution the Fuel Administration was the organization for making effective the requests of the War Industries Board for the movement of coke. The general coöperation of the coke industry with the War Industries Board and the Fuel Administration is evidenced by the fact that in no one month was it necessary to issue orders or requests to coke producers for the movement of a tonnage of coke exceeding 1¼ per cent. of the total production for the month.

The constantly increasing demands for coke, irregularity in car supply and the labor shortage in many fields resulted in much off-grade coke being produced and moved to furnaces. Upon this being brought to the attention of the Fuel Administration, coke inspectors were appointed to investigate complaints and remedy conditions where possible. In some cases prices were reduced where off-grade coke was being shipped.

In the work of the Fuel Administration the effort was made to utilize the existing agencies of production and distribution, and to alter trade practices and methods only where such changes promised to mobilize the coke industry more effectively for the vigorous prosecution of the war.

Louisville Coal Trade in 1918

By A. W. WILLIAMS
Louisville, Ky.

SYNOPSIS — *Western Kentucky coal obtains a firm hold on Louisville market. Strong possibility that river trade will receive new impetus. Considerable development work throughout the state, particularly in the Elkhorn fields. Business during the new year depends largely on removal of Government restrictions.*

As a result of the zoning out of certain coals during the spring and summer season of 1918, when eastern Kentucky grades were shipped largely into Michigan, the Lake region and to gas and byproducts plants, western Kentucky coal got a better foothold on the Louisville market than at any previous time in its history. For several months western Kentucky coal came in well, and most of the summer stocking was done on this grade. A considerable amount of higher grade coal, known as Hazard coal, a slow-burning, white-ash coal produced in eastern Kentucky, also became much better known in the local market. This coal is really an excellent coal for domestic purposes and represented about the only grade of eastern Kentucky to be had on the market, as other eastern Kentucky coals were largely gas coals, which were needed for other purposes. Louisville and vicinity was largely stocked on western Kentucky domestic, however. Numerous steam consumers also purchased this coal to a greater extent than ever before.

It is believed that as a result of the heavy stocking and use of western Kentucky coal in Louisville during the past year, that it will have a much better sale here in the future, owing in part to the fact that it sells at a lower price than some of the higher grade eastern Kentucky varieties.

Louisville Able to Procure Usual Grades

Except for a few months when eastern Kentucky coal was routed to the north, Louisville was able to secure her usual grades. Louisville depends almost entirely on Kentucky production, consuming Hazard coal, western Kentucky, Harlan, Straight Creek, Jellico, Elkhorn and some little Glue Gem. The latter does not come into Louisville to any such extent as Hazard or Harlan. In addition there is some little Indiana coal, which comes in by rail to the western end of the city, over the Kentucky & Indiana Terminal. However, Indiana coal has never been used to any considerable extent here.

In addition to these Kentucky coals there was formerly a considerable tonnage of West Virginia coal, and other coal from the Pittsburgh field district. Years ago most of the coal consumed in the Ohio Valley towns came from the upper river fields by water. Later a considerable volume was handled by rail. When the war broke out the high-grade eastern coals went into the east and Pittsburgh district, where they commanded a ready market.

The demand in those districts today is not so keen as it was, and there is a strong possibility that the Monongahela company and other large river coal shippers will get back into the river game again. It is claimed that inquiries are being made all along the river for boats, barges and tow boats for river transportation of coal, and that boat builders have been asked for quotations. There is likely to be a return of the heavy movement of coal by water from the old upper Ohio and Kanawha River districts clean to the gulf. This would naturally cut in on the rail shippers materially, as rail rates are showing a 25 per cent. increase, whereas there has been no increase in water rates other than the actual increase in the cost of transportation, which in many cases is done by the jobber or producer.

Increase of River Traffic During Year

During the past year there has been somewhat of an increase in river transportation of coal by small Kentucky companies, and some large ones. The West Kentucky Coal Co., Sturgis, Ky., is interesting itself to a considerable degree in river shipping, and is collecting a fleet. The Beattyville Coal Co., on the Kentucky River, is also getting into waterway transportation, which is much cheaper if ice and other hazards do not wreck the equipment.

Kentucky production has increased greatly since the war started, due to a ready and eager demand for coal of all qualities, sizes and grades. Considerable activity has been seen in the western Kentucky field, where many new mines have been opened. The Hazard district has seen many new operations started. The Cumberland & Manchester R.R. opened up large fields in the eastern section of the state, and some big developments are promised in that region. In the Harlan districts several companies are waiting on railroad extensions and plan development when it is possible to reach market. In the Elkhorn fields, around the extreme eastern section of the coal fields of the state, a greater amount of development has been reported than from any other section. Several branch railroads are going into that district, and many new mining towns, with power-equipped mining companies, are getting ready to ship coal as soon as the lines are completed. Numerous other developments have been reported from the Harlan and Hazard fields, also from around the Straight Creek and Jellico fields.

At the present time there is little demand for coal of any grade, and mines are generally working on reduced time. The producers and jobbers are making a hard drive for business, but steam consumers are still loaded up and are operating on a smaller consumption basis themselves. Domestic consumers are well stocked, and due to the mild weather their stocks may carry them much later into the spring than had been anticipated. It had been generally believed that stocks would carry the domestic consumer until about Feb. 1, but unless cold weather is experienced

in the month of January many domestic consumers will run the season out on less than two-thirds of the coal they burned last year, and without exhausting their stocks, which in many cases were based largely on last year's consumption.

Retailers have no business to speak of. Their trucks and wagons have been put up, about one-third of their delivery equipment being kept busy. Many laid in large yard stocks of mine-run and low-grade coals, fearing a repetition of the troubles of 1917, and figuring that it would be far better to have coal of any description on hand than to be delivering direct from cars, as was the case in 1917. Prices have been weaker on all grades, and retailers have been trying to reduce stocks on hand rather than buy any additional coal, as it appears certain that prices will go no higher and high-priced low grades now on hand must be cleaned up.

Fixed Prices Stabilized Market

As a result of Government prices the market has held up in good shape. Retailers, jobbers and producers in many instances have been guilty of cutting prices slightly in order to create business. However, with a maximum Government price to work from, there has been some sort of an established market, with the result that few operators have cut more than 50c. a ton from the Government maximum prices. This has afforded the retailer a little more security than in former years. It is now a question as to when all prices and restrictions will be taken off. Restrictions have been removed in the flour-milling and other industries, and are likely to be removed from coal at any time. Many coal men adhere to the belief that in the event Government prices are relinquished the coal trade should continue to operate as close to these prices as possible and take advantage of the fact that the Government set aside the Sherman act in creating maximum prices. Such action would not represent any combine in restraint of trade, but it appears as though it will be utterly impossible to hold the trade in line.

The retailers have done better during the past two years than at any previous time in their history. Credits have been extended for only thirty to sixty days at the most, while many of the sales have been made on a cash basis. However, today retailers are so anxious to sell that they are not so particular as they were regarding cash or credit, and it is likely that conditions will eventually return to their former stage, when many consumers only paid their bills when they wanted to restock.

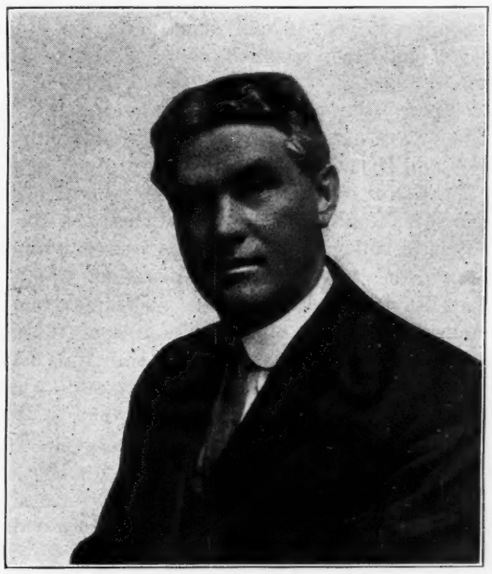
The prospects for the new year are uncertain. Rail producers cannot get away from the belief that river transportation will again be a serious factor. The zone system has lost many former connections for producers in certain sections, with the result that much rebuilding will have to be done, and at a considerable cost. Many producers have been putting their profits right back into mine improvements and additional mines, with the result that they are now tied up with the banks, and in many cases are poorer than they were insofar as ready cash is concerned. However, they have better facilities for getting out coal than they had before, and more valuable properties. They have lost far less on credits than at any previous time in their history. What the year will bring forth is any man's guess, but with the elimination of the zoning system it is believed that business as a whole will return to about the same general plane that it was on before the war.

James Scott Thompson Dies

In the death of James Scott Thompson at Salt Lake on Jan. 15 the coal industry of America loses one of its most forceful and efficient mining men of the younger generation. Mr. Thompson's death was unexpected and came as a result of heart disease.

He was born in Chicago in 1875 and graduated from the Colorado School of Mines in 1899. Physically, few men were more powerful than Mr. Thompson. During his college course he gained a wide reputation in western athletics, being recognized as one of the greatest football stars in the Rocky Mountain country.

Practically all of his business life was spent in the service of coal corporations. On leaving the School of



JAMES SCOTT THOMPSON

Mines he was first employed by the Colorado Fuel and Iron Co. Later he became assistant superintendent for the Federal Lead Co. in Missouri, but in less than a year returned to the coal fields, accepting a position as general superintendent of the Stone Canyon Consolidated Coal Co. in California. In 1909 he again entered the employ of the Colorado Fuel and Iron Co., continuing in its service until 1914, when he was appointed general superintendent of the Utah Fuel Co., which position he continued to hold until the time of his death.

Mr. Thompson is a member of the American Mining Congress and the Rocky Mountain Coal Mining Institute. His sudden death has come as a sharp blow to his host of friends throughout the country. The coal industries of Colorado and Utah, however, will continue to feel the influence and benefit of his effective service for a long time to come.

Preparation of No. 4 Buckwheat in the Cone Separator

SYNOPSIS—*With the increasing demand for and cost of anthracite, greater refinements in preparation and conservation of this valuable fuel are necessary. Among the methods used for cleaning the smaller buckwheats is the cone separator—a device long used in removing impurities from bituminous coal. Its adaptation to anthracite requirements, modifications in design and some of the results obtained, are described in this account of an interesting experiment being tried by the Lehigh Coal and Navigation Company.*

PENNSYLVANIA anthracite was likely the first coal to be washed in the United States. And probably the first extensive washing of anthracite was undertaken by the Lehigh Coal and Navigation Co. about the year 1875. This company has jigged domestic coal for many years, separating it from slate by this and other well-known methods. Until recently No. 1 buckwheat was the smallest size of anthracite cleaned of impurities. Now the Lehigh Coal and Navigation Co. improves its No. 4 buckwheat to such an extent that instead of its carrying 30 to 35 per cent. ash of ordinary breaker preparation, this size contains only 17 to 18 per cent. ash, in everyday practice; it has been cleaned down to 11 to 12 per cent. ash.

The company in question is accomplishing this result by a cone separator (shown in the accompanying illustrations), and the method is attracting much attention among anthracite operators. Bituminous coal has been cleaned by the Robinson and Howe machines for some time, but it is believed that this is the first application of these processes to anthracite preparation. The Lehigh Coal and Navigation Co. began experimenting with this separator early in 1916, adapting it to the requirements of anthracite. During this time the size and shape of the cone was changed somewhat; at present it is constructed as shown in detail in Fig. 1, and its relation to accessory parts is given in the section of that portion of a breaker equipped with this device (Fig. 2).

In the breakers equipped with the cone separator all slush water from the jigs and shakers goes to the collecting tank *A* (Fig. 2). From this tank the slush water is pumped by a 3000-gal. centrifugal pump through a 10-in. pipe to the cone separator. The pipe from the pump to the cone should be as short and have as few turns as possible, to avoid clogging up. The tank is always higher than the pump, to avoid having to prime the latter. The slush water enters the cone separator near the bottom and overflows around the circumference of the top. Entering the cone through a 10-in. pipe, the water rises and spreads out to fill a cone with a top ring measuring 7 ft. 8 in. in diameter. Thus the velocity of the water, carrying the fine coal, slate and other impurities, is considerably reduced; the slate and heavy impurities settle to the bottom and the lighter coal rises and goes over the top with the water.

A vertical shaft in the center of the cone carries three sets of horizontal arms; this stirring apparatus revolves at the rate of 12 r.p.m., keeps the contents of the cone agitated and does not permit fine material to settle on the sides of the cone. In Fig. 1 the extension of the bottom of the cone is omitted; it is shown in Fig. 2 and is marked *E*. The portion *E* is a metal cylinder equipped with two slide gates. As the slate and other refuse accumulates at the bottom of the cone, it is removed by opening these slide gates, one at a time. Thus this bottom contrivance acts as a lock and the cone water is retained while the impurities are being removed.

The top of the cone separator is surrounded by a trough by means of which the water overflowing from the cone is carried to a series of dewatering chutes *G*. These chutes have a pitch of about one in twelve and dewater the fine coal carried out of the cone with

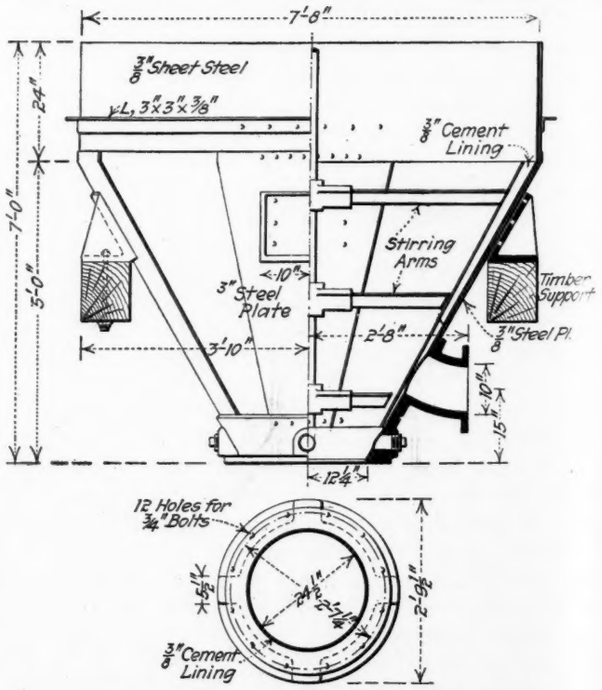


FIG. 1. DETAILS OF CONE SEPARATOR

the water. These chutes consist of a screen with $\frac{3}{16}$-in. perforations under which is a trough; water coming through the screens is collected by the troughs, from which the water is led away by the vertical boxes *H*.

Coal passing over the dewatering chutes goes to the shaking screen *J* where the dewatering process is completed. This shaker is necessary not only to carry the coal to a point where the material is entirely dewatered, but it is also useful to transport the coal to the storage

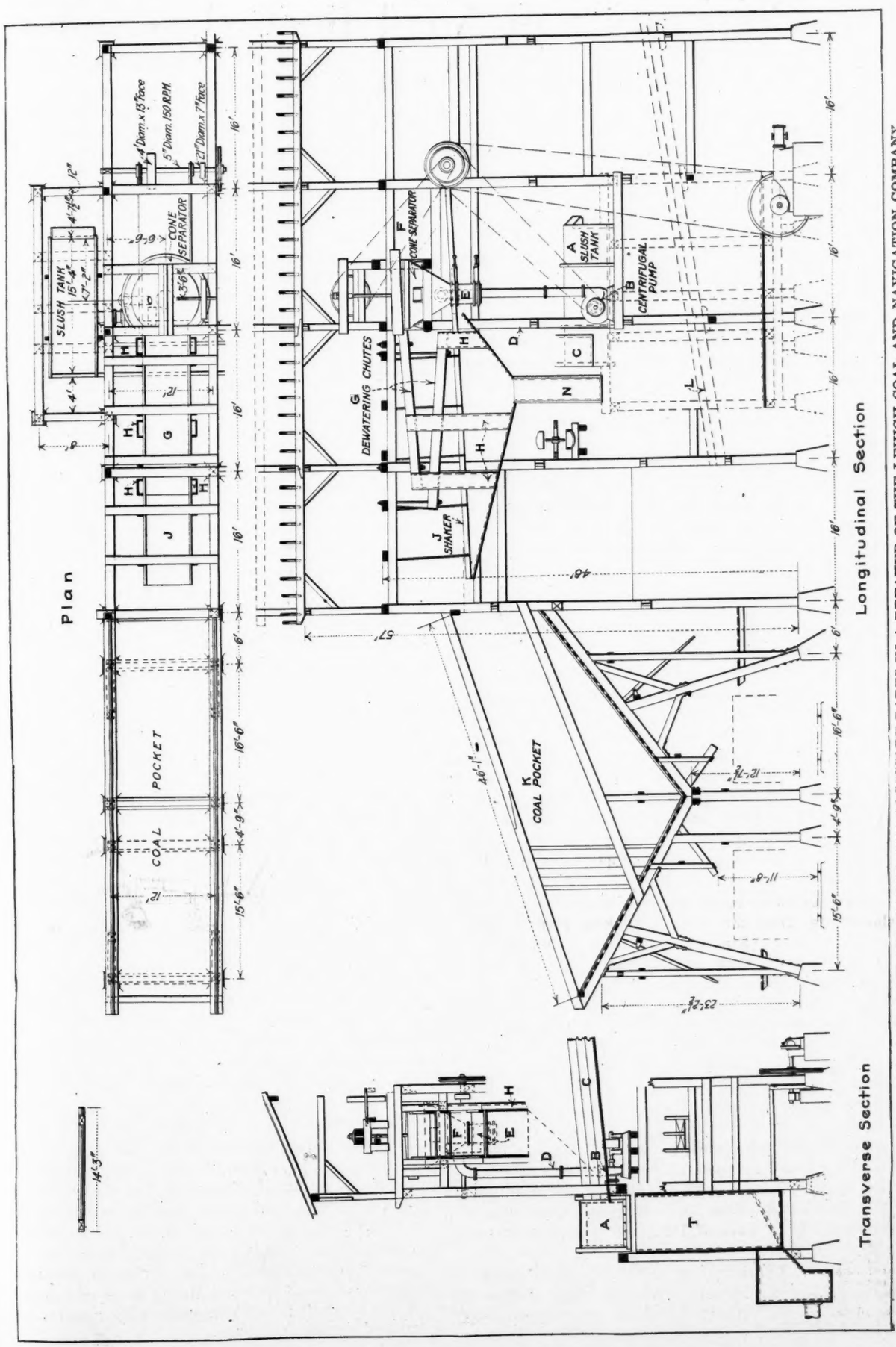


FIG. 2. INSTALLATION OF CONE SEPARATOR AND ACCESSORY PARTS IN A BREAKER OF THE LEHIGH COAL AND NAVIGATION COMPANY

pocket from which railroad cars are loaded. The shaker runs at the rate of 150 r.p.m. All water from the dewatering chutes and the shaker is collected in a hopper under the shaker; from here it is carried by a chute to the tank *T*, from which it is pumped to dams.

Special provision is made to load No. 4 buckwheat into railroad cars, as it takes longer to load it than other coal. It is loaded on tracks other than the main loading tracks for this reason. Two loading tracks are shown under the No. 4 buckwheat pocket in Fig. 2.

The Lehigh Coal and Navigation Co. has five cone separator installations at the following plants: The Nesquehoning, Lansford, Tamaqua and Coaldale breakers, and the Ashton washery. Sand, gravel and slate are removed from No. 4 buckwheat in the cone separator and coal dirt and mud in the dewatering apparatus. Each cone separator has a capacity of 150 to 250 tons per day. The total production of No. 4 buckwheat (by this process) at these five Lehigh Coal and Navigation Co. plants for the months of March to November inclusive of the year 1918 was 14,142, 12,934, 14,333, 12,025, 6818, 17,485, 12,035, 17,367 and 16,007 tons respectively. This tonnage was from freshly mined and washery coal and amounted to 123,146 tons for the nine months noted. This company can dispose of all of the No. 4 buckwheat it can produce which does not contain more than 17 to 18 per cent. of ash; the amount of refuse remaining in this size of coal after treatment by the new method is well within this limit. The Lehigh Coal and Navigation Co. uses No. 4 buckwheat with low amounts of impurities in its briquet plant and sells it as fuel, thus conserving valuable coal.

The cone separator should be serviceable in removing gravel from the small sizes of coal from strippings. Gravel frequently is washed into strippings from adjoining banks, gets mixed with the coal and generally is a nuisance in preparation. Sulphur is another impurity which it is highly desirable to remove from prepared coal. Probably certain forms of sulphur are more commonly found in the smaller sizes than in any other size of anthracite, often occurring in the form of scales. In the smaller sizes these scales generally become detached from the particles of coal and their removal should be readily effected in the cone separator.

Furthermore, in large lumps, good coal is often found attached to slate and rock. By crushing and recrushing a more or less complete separation is possible and the resulting material is in ideal shape for treatment by the cone process. There seems to be a difference of opinion as to the possibilities of this method of cleaning anthracite. But there is a tendency on the part of some of the officials of the Lehigh Coal and Navigation Co. to further investigate the matter, believing its scope is wider than its present use.

Nearly 600,000 more cars of coal were loaded during 1918 than was the case in 1917, according to figures compiled by the Railroad Administration. The loadings during the week ended Dec. 28, as compared with those of the corresponding week of 1917, are as follows:

	1918	1917
Total cars bituminous	107,350	154,883
Total cars anthracite	24,564	28,992
Total cars lignite	3,490	4,550
Grand total all cars coal	135,404	138,425

Pooling Report of the Wholesale Coal Trade Association

A conference to consider recommendations and suggestions contained in a report on matters concerning the Tidewater Coal Exchange made by the Bituminous Operators' Committee of the Wholesale Coal Trade Association of New York, of which W. A. Marshall is the chairman, was held on Jan. 15 in the New York office of the Exchange. Those in attendance were J. W. Howe, Commissioner of the Tidewater Coal Exchange; George F. Malone, Deputy Commissioner, at Baltimore; Mr. Bailey, of Norfolk; J. W. Searles, Deputy Commissioner, and his assistant, Mr. Thompson, of the New York office of the Exchange; Mr. Marshall, John W. Whitely, Charles A. Owen and Charles S. Allen, representing the Wholesale Coal Trade Association.

Mr. Marshall, in the committee's report, named three respects in which the present rules governing the Exchange should be amended. They are: (1) A more scientific classification; (2) a different method of apportioning demurrage charges and (3) a change in the method of placing embargoes.

The committee believes that with the present demurrage rules and charges it is highly important that the Exchange should be continued, and that it is certain that without the pools, the demurrage charges would be so heavy as to make it impossible for many, if not all, to ship to tide.

Present Classification of Coal Unscientific

The present classification is on so unscientific a basis, says the report, that it works a grave hardship upon the shippers of high-grade coal to a given pool, much trouble having been experienced due to the fact that inferior coals have been shipped to pools supposed to have only coals of better grades, and when sold on the latter basis have proved unsatisfactory upon delivery, resulting in complaints and in some cases loss to the shipper. Many consumers by way of protest against this unscientific classification are now demanding that their coal, whenever possible, be sent to them all-rail so as to avoid this difficulty; and this is being done even in the face of extra transportation and handling charges.

It was decided at the conference that a committee or committees will be appointed by the Executive Committee of the Tidewater Coal Exchange, probably at its next meeting, to take up and handle to a prompt conclusion this matter.

The conference then took up the matter of demurrage charges. On this matter the report states that demurrage charges should be assessed against and paid only by those shippers on whose shipments the charges have accrued and in proportion to the amount accrued against each individual; that those shippers should have the benefit of the credits earned, if any, by those handling their shipments within the free time, but that those so handling their coal should not be made to bear any part of the demurrage charges caused by others. In other words, that the credits made, if any, should go to reduce the charges against the less fortunate members of the pool, but that they and they alone should bear the penalty for lack of promptness in disposing of the coal handled for their account.

It was announced at the conference that this recommendation had been adopted by the Exchange and that it would be put into effect as soon as the necessary details were worked out.

The report stated that the present rules of the Exchange provide that when a shipper fails to furnish boats to promptly move his consignments, an embargo shall be placed against further shipments by that person. This, the committee believes, should be done in all cases; but the embargo should not be applied to every shipper through a given pool, regardless of his performance in moving his consignments.

The Exchange, it was announced following the conference, commended this recommendation, and the matter is now being handled by the Railroad Administration with a view to preventing the placing of embargoes except upon the recommendation of the Exchange. It was announced by Mr. Searles that the assent of all but one of the carriers had been obtained, though it was expected that this would be received in a short time. The committee of the association in its report suggested the following schedule for coal classification:

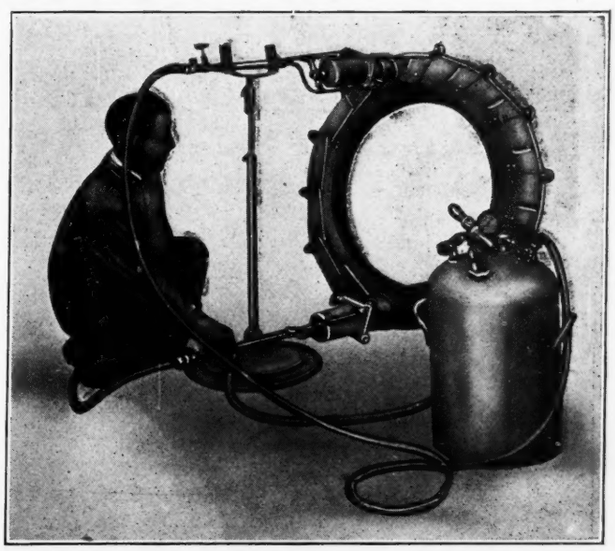
	Specifications	Description	Classification
1	Volatile under 24 Ash under 8.50 Sulphur under 1.50	Low volatile Low ash Low sulphur	Smithing
2	Volatile 24 to 32 Ash under 8.50 Sulphur under 1.50	Medium volatile Low ash Low sulphur	Byproduct and high grade gas coal
3	Volatile over 32 Ash under 8.50 Sulphur under 1.50	High volatile Low ash Low sulphur	
4	Volatile under 24 Ash 8.50 to 12 Sulphur under 1.5	Low volatile Medium ash Low sulphur	Stoker non-clinkering
5	Volatile 24 to 32 Ash 8.50 to 12 Sulphur under 1.50	Medium volatile Medium ash Low sulphur	Stoker non-clinkering
6	Volatile over 32 Ash 8.50 to 12 Sulphur under 1.50	High volatile Medium ash Low sulphur	Railroad fuel
7	Volatile under 24 Ash under 8.50 Sulphur over 1.50	Low volatile Low ash High sulphur	High B.t.u.
8	Volatile 24 to 32 Ash under 8.50 Sulphur over 1.50	Medium volatile Low ash High sulphur	High B.t.u.
9	Volatile over 32 Ash under 8.50 Sulphur over 1.50	Low volatile Low ash High sulphur	Railroad fuel, cement plants, etc.
10	Volatile under 24 Ash 8.50 to 12 Sulphur over 1.50	Low volatile Medium ash High sulphur	Fair coal graded as to volatile
11	Volatile 24 to 32 Ash 8.50 to 12 Sulphur over 1.50	Medium volatile Medium ash High sulphur	Fair coal graded as to volatile
12	Volatile over 32 Ash 8.50 to 12 Sulphur over 1.50	High volatile Medium ash High sulphur	Fair coal graded as to volatile
13	Volatile under 24 Ash over 12 Sulphur over 1.50	Low volatile High ash High sulphur	Cheap fuel varying as to volatile or character as to smoke
14	Volatile 24 to 32 Ash over 12 Sulphur over 1.50	Medium volume High ash High sulphur	Cheap fuel varying as to volatile or character as to smoke
15	Volatile over 32 Ash over 12 Sulphur over 1.50	High volatile High ash High sulphur	Cheap fuel varying as to volatile or character as to smoke
	Rejected coals		
16	Volatile under 30 Croppy or badly prepared	Low volatile	
17	Volatile over 30 Croppy and badly prepared	High volatile	

The suggestion has been made that the use of the B.t.u. basis be substituted for the percentage of ash, and the fusing temperature be substituted for the percentage of sulphur.

New Type of Tire Expander for Use in Coal Mines

The accompanying illustration shows a new tire expander designed for coal mines and being produced by the Hauck Manufacturing Co., of Brooklyn, N. Y. It is claimed that it will expand steel in five minutes and heat to cherry red in seven minutes.

The expander consists of two special kerosene burners, a 12-gal. tank with hand pump, built inside the tank; two 12-ft. lengths of oil-resisting hose, and an adjustable sectional shield which is placed on the tire.



NEW TYPE OF TIRE HEATER FOR MINE USE

The latter is constructed in 10 in. sections and can be adjusted to fit any size tire.

Where no compressed air is available the tire heater is furnished with kerosene-vaporizing burners—which operate about three hours with one pumping. Where compressed air is available the tire heater is furnished with compressed-air burners, and it also can be furnished as a combination hand pump and compressed-air outfit. The burners when not used with the heater can be used for many special purposes where an intense heat is required, such as brazing, preheating for oxy-acetylene welding, loosening nuts, boiler repairing, straightening shafts, expanding machine parts, making shrink fits, melting out babbitt from bearings, general locomotive and car-repair work, thawing out railroad switches, thawing out empty coal cars for closing the hoppers, and for many other heating operations.

Consumers' and Dealers' Reports To Be Discontinued in Near Future

Weekly reports from industrial consumers and coal dealers, which have been required by the Fuel Administration since June, 1918, will be discontinued after Feb. 1. These reports, coming from nearly 70,000 sources, were used in determining the equitable distribution of coal. With the discontinuance of these reports, it is probable that the distribution section of the Fuel Administration will have only an advisory relation with the Fuel Administration.

Cincinnati Market Conditions in 1918

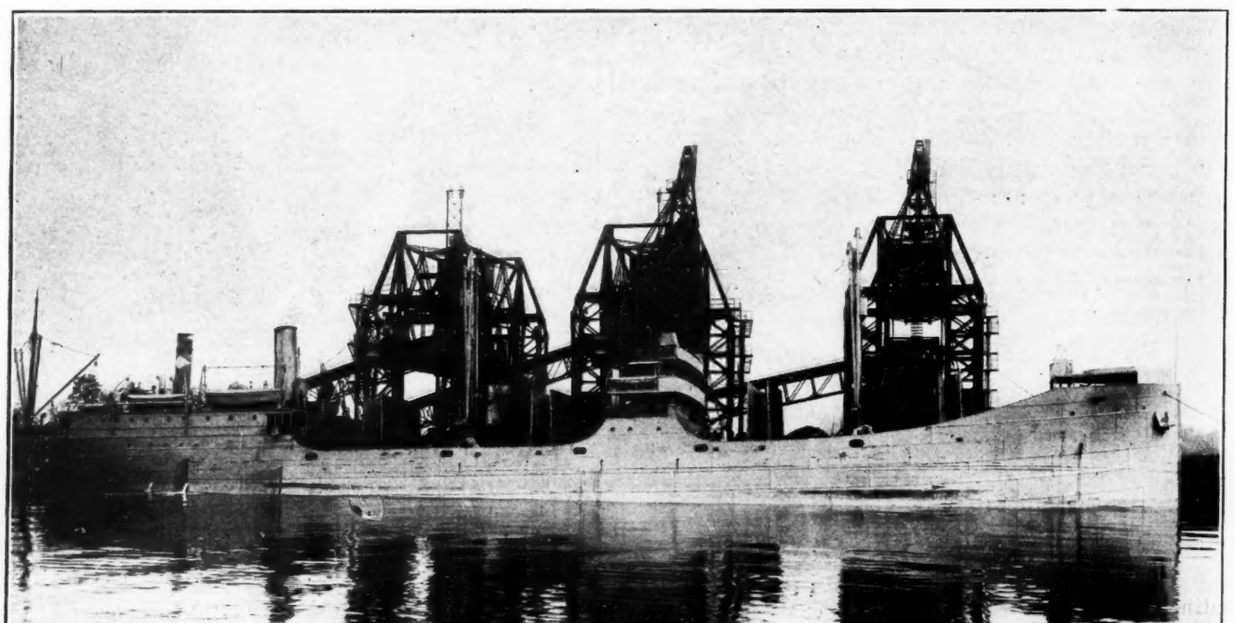
By KENNETH C. CRAIN
Cincinnati, Ohio

THE past year in Cincinnati was in many respects the most extraordinary which the coal trade has ever experienced, not only on account of the conditions common to the trade everywhere, but through some which were perhaps a trifle emphasized locally. The extremely severe winter which was experienced, with some of the worst weather in years during January and February, of course had its effect on the coal business, resulting in a heavy and continuous demand, which was filled locally only with considerable difficulty, and which in some instances in nearby towns could not be taken care of at all.

The year thus ushered in was destined to continue in a manner which promised for the trade in Cincinnati the most pleasing business conditions which could possibly be asked. In spite of the Government regulations regarding zoning, price limit, etc., the volume of business offered was such that in that important particular, at least, nothing remained to be desired; and the lesson of the severe weather did all that was necessary to a continuance of good business. With the recollection of this winter behind them, and with the united appeal of the various Fuel Administration authorities and the coal men themselves, the public, including consumers of all classes, promptly proceeded to start laying in coal for the season of 1918-19, almost before the snow of the previous winter had melted.

Not only domestic consumers, with needs limited by the consuming capacity of their furnaces, to a total of ten or twelve tons, were in the market for coal, but industrial consumers as well. Warnings were issued both by the fuel authorities and by the local gas company to the effect that consumers should not look for a supply of gas adequate to meet demands in extremely cold weather, and the experience of the previous winter amply backed up this warning. The result was something formerly unknown in the trade—a spring and summer season with a demand for coal which taxed every facility of the coal dealers and their connections to supply.

Not only was the current supply of coal inadequate to meet the demands booked by the dealers, but hauling capacity was also inadequate. In short, the state of the market more resembled that of a cold winter than the spring and summer season, proverbially dead with the coal trade. It was a common expedient with the trade, in consequence of this condition, to compile waiting lists of customers, notifying each when he could have his coal, and, in some cases, insisting that the full amount desired be taken when available, under penalty of losing his "turn"! This remarkable state of affairs, which might have been considered as totally impossible, actually lasted right up to the end of the summer, when consumers very generally had managed to secure all the coal they needed to take care of the coming season's fuel requirements.



COLLIER "TUCKAHOE" LOADING COAL AT CURTIS BAY COAL PIER, BALTIMORE & OHIO RAILROAD

Industrial storage was extraordinarily heavy, many manufacturers, by utilizing yards and other outdoor space, managing to pile up anywhere from two to six months' supply. This was the condition when the fall and winter season began, and when, on Nov. 11, the armistice was signed which caused the cessation of hos-

tilities and the immediate suspension or cancellation of war orders. And as scores of plants in and around Cincinnati were engaged on war orders, their fuel requirements showed a prompt diminution, in some cases amounting to complete cessation.

With this virtual elimination of industrial requirements, the trade has been further confronted during the winter with remarkably mild weather, such as to reduce consumption for heating purposes to a minimum. Thus, the storage supplies have been drawn upon but little, and unless the remainder of the winter sees some much more severe weather, and more of it, than the first part, many consumers, both domestic and industrial, are likely to carry over handsome balances of fuel, to an extent hardly paralleled in the past. As the first snow of the season fell on Christmas Day, and the subsequent cold snaps have been short and far from severe, this possibility has to be figured in considering the coming demand.

In attempting to forecast the state of the market, however, the question of how long it will take local industries to get back into peace harness, after being devoted for several years to war, is vital; and while it goes without saying that the resumption of peace activities will take place sooner or later, nobody knows just when it will be. In consequence, the trade at present is simply awaiting developments, fully aware that nothing can be gained by attempting to force matters, and confident that there will be an ample demand for fuel when conditions again become settled.

Good Business Outlook for 1919

R. A. Colter, secretary and treasurer of the C. G. Blake Co., and for the past year president of the Cincinnati Coal Exchange, comprising the leading members of the trade in its membership, takes this view:

"We are looking for good business when industrial concerns get around to a peace basis again," remarked Mr. Colter, speaking of prospects for 1919. "The weather, of course, has been and is against the trade, so far as demand is dependent upon consumption for heating purposes; and the disruption caused to manufacturing by the necessity of changing overnight from a war to a peace basis will take some time to repair. However, if the trade sits tight and waits for the change to take place, there will be a resumption of at least normal demand, the only question being just how long this will take. If the weather remains open for the balance of the winter, necessitating only a light consumption of fuel, there will be considerable stocks of coal carried over, as the case nearly always is when there is a mild winter, and this will tend to cut down spring business somewhat. Prospects in general, however, are good, and I see no reason for pessimism."

"We are optimistic," said J. C. Reilly, manager of the Queen City Coal Co., one of the larger domestic dealers of Cincinnati, with an especially large business in river coal. "Of course, present conditions are not such as to cause activity in the coal trade; but it will not be long before the reconstruction period is over. It will take us all, working together, to tide things over to normal conditions again, but there is no doubt that we will do it. Warm weather, coupled with the heavy storage demand which made business last spring and summer as good as it usually is in winter, is hurting domestic demand, but the industrial demand is off on account of the change from war to peace, which has affected many manufacturers seriously. Some of these manufacturers had a supply of coal stored for several months, and with the coming of peace they preferred to use this rather than save it for a reserve, as the general tendency was to cut down expenses and reduce investment.

"The spring and summer season, as I say, was remarkably good, keeping us at work fourteen hours a day taking care of the demand; and this demand was in effect that which would ordinarily wait for winter, so that there is no room for complaint on the score of the present dullness, in so far as it is caused by the extent to which people stored coal. Our supply of river coal was always good last year, on account of the use of artificial waves created by the use of the Government dams to bring coal down when the stage of the river might not otherwise have permitted it."

According to Thomas H. Richardson, manager of the Cincinnati branch of the Consolidation Coal Co., the heavy storage of coal last summer is the principal factor just now, as coal thus stored is being used to the exclusion of that offered on the market.

Consumers Have Learned a Lesson

"If these storage supplies are used up this winter, spring and summer business ought to be excellent," said Mr. Richardson. "People have learned to store their coal, and they have also learned to pay a fair price for it. The conditions of the past year, in these respects, did the trade a good service, and brought about a better appreciation in the minds of the public of the value and importance of coal than could ever have been instilled in any other way. It will not be as difficult in the future as in the past to induce customers to buy their coal in the spring and summer for the winter's requirements."

"The coal trade will be busy in 1919, as usual, but it will have to wait for business in general to get turned around, so to speak, before demand is resumed," is the way C. R. Moriarty, Western sales manager of the Cabin Creek Consolidated Coal Co., expressed his view of the situation. "The prospects for foreign business and other factors not at present clear will have to have time to develop themselves before manufacturers will feel like going ahead vigorously. Just now demand is limited, on account of reserve supplies of fuel in storage, and because concerns having coal coming on contract are of course able to get all they need under their arrangements. The railroads, which usually furnish a source of demand during the latter part of the winter, are in a similar position, so that there is hardly any quarter where one may look for business at present.

"The coming of peace, with the reduced coal requirements which result, among other things, will undoubtedly hit some small coal mines, and hit them hard. Small, high-cost operations were enabled to do business profitably under the drive for fuel which was on during the war, but this condition has now changed. With the resumption of normal conditions in the trade, including normal competition, business will seek its usual level. In the meantime, as there is no use in attempting to stimulate a demand that does not exist, the coal trade in general is showing great good sense in quietly awaiting the turn of things."

Suggestions for the Peace Conference

In Paris the representatives of the "associated" nations are trying to find a solution of the problems of the war. Here is a German suggestion taken from the Petition of the Six Associations—the League of Agriculturists (*Bund der Landwirte*), the German Peasant's League (*Deutsche Bauernbund*), the Christian German Peasant's Unions (*die christliche deutschen Bauernverein*), the Central Association of German Manufacturers (*Centralverband deutscher Industrieller*), the Manufacturers' League (*Bund der Industriellen*) and the League of Middle-Class Citizens in the German Empire (*Reichdeutscher Mittelstandsverband*). The reader will be interested to see how satisfactorily the coal fields and plants of Belgium and France are turned over to Germany. The proposal was made on Mar. 10, and May 20, 1915, the Petition being sent to the German Chancellor, Dr. Von Bethmann Hollweg, and to the Governments of the various Federated States of the German Empire.

"As a supplement to this memorandum, we must here lay special stress on the fact that the political, military and economic objects, which the German people must strive after in the interests of the security of their future, are inseparably connected with one another. . . . Hence it follows that even those demands which seem at first sight to possess a purely economic significance, must be viewed in the light of the urgent necessity for the greatest possible increase of our national strength and also from a military standpoint.

"This applies with special force to the demands, which are set forth in the memorandum, both (a) for the acquisition of territory suitable for agricultural settlement and (b) for the appropriation of the iron-ore district of the Meurthe and Moselle, of the French coaling districts in the Departements of the Nord and the Pas-de-Calais, and also of the Belgian coal fields. . . . Acquisitions, such as that of the iron-ore and coal districts mentioned above, are demanded by our military necessities and not by any means only in the interests of our manufacturing population. . . . The possession of larger supplies of coal—and, in particular, of coal rich in bitumen, which is found in great quantities in the basin of Northern France—is at least as decisive for the result of this war as the possession of iron ore.

"Belgium and North France together produce over forty million tons. Even today, as the British prohibition of coal exports (enacted on May 15) shows us, coal is one of the decisive means of political influence. The neutral manufacturing states must do the bidding of that belligerent who can guarantee a supply of coal. We cannot do this at present in a sufficient degree, and we are today already compelled to fall back upon the Belgian coal supply, in order not to let our neutral neighbors become entirely dependent upon England.

"It is quite probable that the systematic increase of the Belgian coal output, even during the present war, will prove a weighty factor in determining various neighbor states to remain neutral.

"That coal, which produces coke and gas, at the same time supplies the bases of our most important explosives, is presumably well known, as also is the importance of coal in the production of ammonia.

In benzol, moreover, it offers the only substitute for gasoline, of which we are short; and finally, it supplies coal tar, which yields (a) the oil fuel so indispensable for the Navy, (b) anthracite (anthracene) oil, the most serviceable substitute as yet obtainable at home for lubricating oil, and (c) naphthalene, the probable base of synthetic petroleum.

"It may in this connection be remarked that we should probably be unable to develop our destroyer and submarine warfare to the requisite intensity without an abundance of liquid fuel. The course of the war has so clearly proved the superiority of oil fuel over ordinary coal-firing in torpedo boats, that we should be guilty of unpardonable folly if we failed to base our future conduct on this experience.

"If our hostile neighbors secure possession of the oil wells, Germany must take care to secure for herself the necessary supplies of gas-producing and bituminous coal, and must in time of peace develop these until they constitute inexhaustible sources of oil, benzol, toluol, ammonia and naphthalene; and that, not merely in order to increase our prosperity in time of peace, but as an indispensable part of our equipment for war."

The Manifesto of the Intellectuals—German professors, diplomats and superior Government officials—dated June 20 of the same year, says less about coal but demands all (and even more than all) the territorial concessions demanded by the six associations. It, however, is quite specific as to how complete the conquest of the lands mentioned is to be:

"In order not to have conditions such as those in Alsace-Lorraine, the most important business undertakings and estates must be transferred from anti-German ownership to German hands, France taking over and compensating the former owners. Such portion of the population as is taken over by us must be allowed absolutely no influence in the Empire."

In dealing with Germany we are confronting a nation which can quote every moral phrase ever coined and appeal to every moral sentiment ever felt by humanity and then will lie, steal and murder without restraint. Germany expected to rob the world and then ask an indemnity for a war she started. Is any nation to be condemned for insisting, not on the right to rob Germany, but on the right to ask an indemnity from that Germany which started the war in the hope that it might be enabled to loot an unsuspecting world.

Local Coal Associations Would Help the Nation's Coal Industry

To carry out national plans for extending helpful service to the coal industry, the great need exists for local coal associations in several important districts. This fact became increasingly evident at the recent meeting of association secretaries, which was held in Washington. One of the principal areas which is without associations is southern West Virginia. The reason given for there being no associations in that region is because most of the operators are non-residents. The larger low-volatile operators reside in Cincinnati, while many of the high-volatile operators reside in New York.

Bituminous Price and Zone Restrictions To Be Lifted February 1

Coal prices and zones on soft coal will be abolished Feb. 1. An official announcement to this effect was made to the Fuel Administration Jan. 18. The restrictions are retained on anthracite for the present. The announcement carried with it the precaution that both prices and zones would be restored without notice if conditions should demand it. The significant feature of the announcement with regard to the Washington wage agreement reads as follows:

In the light of the so-called "Washington Wage Agreement" of October, 1917, whereby it was agreed to continue the wage scale then agreed upon during the war, but not beyond Apr. 1, 1920, the wages of mine workers should not now be reduced, and it is expected that whatever prices are asked or secured for bituminous coal between now and the promulgation of peace will be based upon the present wage scale.

Along with the zones and prices go the district representatives. The district offices in the Fuel Administration will be kept open until Feb. 15, so that records can be brought up to Feb. 1.

Denies That Railroad Administration Will Attempt To Break Down Coal Prices

Prominent among the many important announcements made recently is the statement of the Director General of Railroads outlining the policy to be pursued in the purchases of locomotive fuel. Director Hines takes occasion to deny that any effort is being made by the railroads to break down coal prices. The text of the announcement, which was issued Jan. 17, is as follows:

The idea seems to have been suggested in some quarters that the Railroad Administration proposes to pursue a policy of so combining and using its purchasing bureau as to break down coal prices with the result of forcing a reduction in the existing rates of pay for mining labor; this is not the case.

It is the policy of the Railroad Administration to avoid at this time any undue concentration of its purchasing power of coal and to accomplish this purpose by permitting each road to purchase its own coal. It is further the policy of the Railroad Administration to require that all bids made and accepted shall be based on the existing scale of wages.

There can be no excuse, therefore, for the making of the claim that coal operators are forced to reduce wages by reason of the Railroad Administration accepting any prices which may hereafter be offered it for coal.

It is already fully understood that the railroads are not to use the car supply as a means of affecting prices. The policy on the other points above referred to is being clarified by the issuance of the following specific instructions which are being issued to make this policy clear to the purchasing agents of the roads:

"1. The railroads must not violate existing contracts or cancel contracts where the quality of coal is in accordance with specifications, without special consideration by the Central Advisory Purchasing Committee of the reasons for cancelling.

"2. The purchasing agent of each individual railroad shall buy the coal for that road under the supervision of the Regional Purchasing Committee of his region. In all requests for bids, the following paragraph should be inserted: 'It is distinctly understood that all bids are to be based on existing rates of pay for all mine labor, and the price will be subject to readjustment in event existing rates of pay are changed.'

"On contracts awarded or orders placed, the following paragraphs should be inserted: 'It is distinctly understood that the prices named herein are based on existing rates of pay for all mine labor and the prices will be subject to readjustment in event existing rates of pay are changed.'

"3. For coal which it is necessary to purchase for requirements prior to Apr. 1, 1919, the purchasing agents of each railroad should request that bids be submitted. They shall not undertake to fix the price of the seller's acceptance or make offers therefor, and shall agree only upon a price that shall be contingent upon the pay-for-mine-labor clause in paragraph 2. No negotiations for contracts for coal for delivery after Apr. 1, 1919, should be undertaken without first obtaining the approval of the Regional Purchasing Committee."

House of Representatives Passes Lignite Bill After Much Debate

By a vote of 182 to 85, the House of Representatives on Jan. 7, after acrimonious debate, passed the lignite bill. The bill already has passed the Senate and now goes to conference. The bill provides for an investigation by the Bureau of Mines to determine the commercial and economic practicability of using lignite in producing fuel oil, gasoline substitutes, ammonia, tar, solid fuels, gas for power and other purposes. It carries an appropriation of $100,000 as passed by the House. The Senate bill carries an appropriation of $150,000.

It is the intention to put up a small plant to demonstrate from a commercial standpoint that lignite can be handled on a profit-making basis. According to Mr. Norton, of North Dakota, the idea is to locate the plant either at Hebron, N. D., or at Minot, in the same state, where there is a private briquetting plant which may be utilized. Mr. Norton made one of the principal arguments in favor of the bill. In part, he said:

Let me call your attention to the immediate and tremendous importance of developing this great natural resource of our country—lignite coal. It is estimated that in the United States there is more than a trillion tons of lig-

nite coal; more than one-third of all the coal in the United States and Alaska is lignite coal. Let me particularly mention just one feature of the possibilities in the development of this low-grade coal. Investigations that have already been made show that as a byproduct from a ton of lignite coal there can be secured about 4 gal. of light oils that can be used in internal-combustion engines. This means that the light oils from lignite coal, and that can be secured from it in briquetting processes, are sufficient to meet the needs of the United States for 150 years, whereas the known or estimated amount of gasoline that can be secured from the petroleum fields of the country will only meet the demands of the United States for about the next 25 years. That is one important feature of this work that will be more fully presented to the country by the experiments and investigation to be carried on under this proposed appropriation.

Another great feature is the transportation problem. Today there is being shipped from Ohio and from other distant fields more than 7,000,000 tons of bituminous coal to the State of Minnesota.

If this lignite coal industry is developed, if the way is pointed out by the United States for private enterprise to engage in this industry, as I believe it should be, instead of transporting coal 1500 to 2000 miles into Minnesota it will be brought down there from the great coal fields of North Dakota, which are distant only a few hundred miles. That *alone* will mean a great economic saving in transportation. It will also allow of needed conservation of coal in Indiana, Ohio and Pennsylvania, where the coal fields are being rapidly exhausted. Today throughout North Dakota there can be seen fields of this coal varying in depths from 20 to 40 ft. One of the principal items in any after-war program for progressive development in this country should be the development and expansion of the use of lignite coal and its byproducts. Up in Canada they have recently appropriated $400,000 to develop the use of lignite coal there. Have we not every reason to do more to develop the use of this product in the United States?

Representative Stafford, of Wisconsin, was the principal opponent to the measure. An extract from his remarks follows:

Here we have an example of the Government going wild in Government ownership. I contend that under the authority the Bureau of Mines now possesses, similar to the authority possessed by the Bureau of Standards—of making laboratory tests to determine the practicability of these various byproducts of lignite coals—it is unwise as now proposed by this bill that the Government should go into the business of establishing a commercial plant. Originally they sought $150,000, and now $100,000 is sought by this ambitious Bureau of Mines. If it were for the purpose of merely laboratory work, I would not rise here to oppose it, but when the Government for the first time in its history is attempting to establish a commercial plant to demonstrate to the country at large whether it is economical, practical, and profitable to sell these byproducts, I say in these piping times of peace we should call a halt.

Representative Wingo, of Arkansas, who led the fight for the bill, declared that it ultimately would mean a saving of $15,000,000 to the State of Texas alone.

War Trade Board Suspends Ruling Concerning Supplementary Ship's Stores

The War Trade Board has announced the suspension of the ruling heretofore enforced, requiring all vessels when making applications for bunker licenses to furnish particulars respecting quantities of bunker fuel, port, sea and ship's stores and supplies on board vessels and those desired to be taken aboard. Hereafter the filing of Bunker Form B9-a, Bunker Form B-10, Bunker Form B-11 and Bunker Form B-12 will not be required.

Bunker licenses will be issued in the same manner as heretofore, excepting no restrictions will be placed upon the quantities of bunker fuel and ship's stores and supplies desired to be taken by vessels. A new combination application and license form will be ready for distribution in the near future, but in the meantime applicants should submit applications on the regular forms (Bunker Form B1-a, if an original license is desired, or Bunker Form B1-b, if a supplementary license is desired), and all reference to the supplementary ship's stores appearing on the applications should be deleted.

Important Ruling on the Subject of Coal Confiscated by Railroads

An important ruling has been handed down by the solicitor of the Fuel Administration to the effect that an owner of coal confiscated by a railroad between Apr. 1, and Oct. 10, 1918, is not deprived by any regulation of the Fuel Administration in effect during such period, of any legal right which he may have to recover the purchasing agent's commission which he has paid or become obligated to pay on such confiscated coal; and that the payment of such commission by a railroad on the settlement for coal confiscated during such period is not prohibited by any such regulation. This ruling, it was announced, supersedes all interpretations inconsistent therewith previously issued to individual railroads or coal companies.

Urges Formation of Statistical Branch for Each Local Coal Association

A statistical branch for each local coal association is being urged by C. E. Lesher, the geologist in charge of the coal division of the United States Geological Survey. This will be necessary, Mr. Lesher says, if the industry is to have at its disposal the most comprehensive statistics. During the war, the coal industry has had the advantage of very complete statistics made possible by the organization of district representatives. The district representatives of the Fuel Administration will discontinue their reports very shortly. This makes it necessary to get local statistics from the coal associations.

Some of the functions of the Fuel Administration probably will continue until July 1. The work of all of its district representatives, however, probably will be discontinued early in February.

Counsel Chosen for Senate Committee Investigating Hard Coal

William Wilhelm, an attorney in Pottsville, Penn., has been selected by Senator Vardaman, the chairman of the Senate Committee on Manufactures, as counsel for the committee in its anthracite investigation. Mr. Wilhelm, during the course of the present inquiry, made a number of sensational charges as to the methods being employed by anthracite operators. He is the author of drafts of legislation providing for Government tenure of percentage of anthracite coal lands; the prohibition of coal shipments when the royalty exceeds 50 cents a ton and the control of leases on undeveloped or abandoned coal lands.

THE LABOR SITUATION

EDITED BY R. DAWSON HALL

General Labor Review

On Jan. 29, at Wilkes-Barre, Penn., a three-day convention of the insurgent organization of District No. 1 is scheduled to begin. The men in that district are in hopes that delegates will come from the two Southern anthracite districts, Nos. 7 and 9.

The Delaware & Hudson Co. has conceded the demands of its Grassy Island Colliery men, at Olyphant, Penn., and has agreed to pay for work on rock to 40 miners and 60 laborers under the agreement of November, 1916. This additional compensation will date back from the day on which the agreement was signed. A large number of consideration miners also will receive similar arrearages. The employees of the colliery voted on Jan. 12 to go back to work.

PAYMENT FOR GANGWAYS INDEPENDENT OF SIZE

The Conciliation Board in the anthracite region has been battling with the question, What is a gangway? The Delaware, Lackawanna & Western R.R. Co., Coal Department, apparently caused certain places to be driven narrower than the regular gangways, for which gangways a certain price had been established. They used these narrower places as gangways and declared that as these places are narrower the price of gangways did not apply. They argued, somewhat reasonably, that the work of the gangway driver determined the price rather than the purpose for which the place was driven.

The umpire said—somewhat testily it would seem—that "he understands fully the difference between gangways and airways, and, while he admits that the passages in the controversy were not as wide as the usual gangways, he asserts that the tunnel was used for that purpose and he refuses to read into the language of the anthracite wage agreement 'meanings that were clearly not in the minds of the parties who made and signed these contracts.'"

GANGWAY BY ANY OTHER NAME WILL COST AS MUCH

He also declared that coal operators cannot evade the payment of specified wage rates by calling an occupation or a place by some other name. That decision seems somewhat like a saying that another wise man recently delivered. He said that now the consumer, by careful stoking, much expenditure and skill, made 1500 lb. do the work of a ton, he should be required to pay a full ton rate for every 1500 lb. of coal received. Few of those who read that remark reacted favorably to it, nor can one react with favor toward the suggestion that the price for excavating a narrow roadway should be the same as for driving a wider place unless there were special conditions modifying this simple proposition. Frequently, it must be added, a wide place can be driven more easily than a narrow one and men are only too anxious to drive places wide, where they are paid for the coal secured. It would seem this was not true at Hallstead Colliery, or why was the price for a narrow airway made less than the price for a wide gangway? The decision of the umpire is made retroactive.

A driver at the Oneida Colliery, of the Lehigh Valley Coal Co., near Freeland, Penn., caused the death of two mules, and was discharged. The other drivers at the mine went on strike Jan. 16, alleging that the discharge of the man was not for his carelessness in taking the mules into the interior of the mine, but because he had been active in union circles. The strike lasted only one day.

President Kennedy in District No. 7 says that some soldiers and sailors in the anthracite mines have been refused their former positions. He says that they all must be reinstated and he will take the matter up with their employers.

In West Virginia Allen Bumpus, a colored miner from Republic, who claims the champion coal-loading record of the Cabin Creek field, was taken off a Kanawha and Michigan train at Charleston, W. Va., charged with ownership of a suitcase full of whiskey. He denied that he was the owner of the suitcase, but was haled before the justice on a Yost law charge.

More trouble has occurred at Drumheller, Alberta, Canada, a coal center already celebrated for production and labor trouble. The Drumheller field is second only, in Alberta, to the celebrated Crowsnest Pass field. Its production slightly exceeds that of the Lethbridge district. Consequently its labor troubles are of importance. It appears that four mines at the village of Wayne had unusually dirty coal. Commissioner Armstrong ordered the operators of these mines to pay 12c. per inch per lineal yard for the removal of this impurity and made the new rate retroactive from June 15 last. The operators declared they could not operate the mines with this handicap, and accordingly they closed them down.

The miners declare that the mines were shut down to beat the Commissioner's decision and not because coal mining under it was unprofitable. They alleged that the operators had other mines that could fill the orders of the mines at Wayne. There are 600 men idle now, and all the men in the Drumheller district are thinking of engaging in a strike if the mines are not reopened under the conditions prescribed by the Commissioner.

At Lethbridge, Alberta, a strike is threatened if two Japanese recently employed at the Galt coal mines are not discharged. At Sydney Mines, in Nova Scotia, the coal haulers are requesting an increase of 15c. per load of the miners. The Amalgamated Mine Workers of Nova Scotia has decided to let the contract for the lowest figure. It is expected that the latter organization will soon merge into the United Mine Workers of America, the men in the mines being desirous of affiliation, and the companies making no protest apparently. Formerly the corporations feared that the United Mine Workers of America might use its power to the destruction of the prosperity of the Canadian mines and to the advantage of those of the United States. They have been persuaded that the district union will have such a degree of autonomy that the dreaded result will be avoided.

About 9,500 mine workers will be affected by the change. The secretary of the Amalgamated Mine Workers is anxious to induce the legislature to amend the compensation law so that the companies will be obliged to compensate the 50 checkweigh men appointed by the men and paid by them.

Faith of Union Not To Be Impugned by Contract-Breaking Strikes

That officials of District 17, United Mine Workers of America, mean business in discouraging wild cat strikes was demonstrated recently in the Fairmont region when 300 miners employed by the Hutchinson Coal Co. at Mt. Clare, who had gone on strike without any authority from district officials, were ordered back to work. When H. E. Peters, in charge of the Fairmont office of the mine workers' organization, upon investigation found that the miners had violated their contract, he called a meeting of the strikers and informed them that they must return to work as they were violating a signed agreement. The striking miners were told that the charter of their local would be revoked unless they lived up to their agreement. Union officials are determined that there shall be no violation of contract on the part of local organizations as it casts discredit on the whole union.

EDITORIALS

Will Wages Increase in Peace Industries?

THERE is a small section of the public which says that wages must come down. It is more likely that the lower wages will rise till they get leveled up to the higher wages. As a result the average wage will increase. This will keep average prices up even though war industries may have to accept lower margins of profit.

The unionized industries have forced wages up and compelled working men, union and nonunion, to pay them; for the consumer pays the increased wage, and what are workers but consumers? During the war industries were developed by the payment of high wages, and the workers in industries that were principally of value in peace were made to stand and deliver. But a new time is at hand. The peace-worthy industries are anxious to recover the men they have lost and to secure the labor of disbanded soldiers. Unless they pay a wage equal to the war-worthy industries at points adjacent (where these are working steadily) they cannot get men.

So there will be a readjustment, still upward. Those who have a desire to buy should buy now before the price rises; for industries only suited to peace will raise prices, and the industries that are fostered by war will, like the rest, have to pay them when it buys such products. This will help sustain such war-worthy industry prices, even where margins of profit are reduced.

There Are Pleasures Even in a Strait-Jacket

THE Boston Fuel Committee on Jan. 10 removed all the restrictions that had up to that time been placed on retail distribution of coal, except the one relating to the maximum price at which coal may be sold. Even this regulation Washington has just revoked. The retail trade is therefore free. With what degree of pleasure does it greet its freedom, seeing that it has learned that there are some real benefits in strict regulation?

The retailer found in it restraint, it is true, but also support. He is now hunting around for some methods of maintaining that support. If the retailer cannot find such methods he, at least, is expecting to find some other ground for hope; for good habits have been formed, and dealers have been indoctrinated by a year of practical experience. Surely some of the supporting helps of strict regulation may still remain with the coal dealer even after he is free from Governmental control.

For free he is. The local fuel administrators admit that there is no further need for their services. It must be true, for such an admission is usually grudgingly made by bureaucrats. Those directors and tutors of the coal industry have even shown their confidence that their work is finished by presenting their resignations. Not only in Boston is this true. In ten days administrators the length and breadth of the land will be laying down their duties, meanwhile excusing the retailers from any allegiance to their behests.

Few clouds are without a silver lining. Behind all the fussy details and multiple annoyances of such careful supervision as has been placed on the coal men are disguised some real benefits which the retailer as well as the operator has not been slow to realize.

Dealers are beginning now more than ever to apprehend the entire cost of the service they have been performing for the public in all its many details. If, when competition is keen, you can only manage to close your eyes to the cost of the service you are rendering, you are quite likely to reckon it at a low figure. Now that the retailers know closely the cost of the accommodation they are affording the consumer, they are likely to have a price, a stable, inflexible price, that will not change, at least markedly, when a much-desired contract is in the balance. The expression "shading of prices" was always an unfortunate one. The consumer ever felt that a shaded price was the mark of a shady retailer. He never quite believed in the dealer who had a price which varied with the reciprocal anxiety of them both to land a contract. The consumer preferred to buy with his eyes shut and was averse to the notion that he was liable to be victimized if he did not manage to arouse a semblance of competition.

Will the dealer now stick by such a price, the sum of his items of expense plus a fair profit? During the war he had to do so and he was pleased so to do. He linked the fair and stable price with the service of his boy at the front. He coupled Government regulation with the even stricter military discipline of the army ranks. He felt it put the Stars and Stripes a little nearer the Rhine. But now it is different. He is free, and the urgency of patriotism is not so plain or so pressing. Will he now base his price on the cost of the staple, freight, wharfage and delivery plus a profit, or on what he thinks he can get his customer to pay, be it much or little?

Will he, moreover, now he is unregulated by anything other than law, reason and conscience, cease raiding his neighbor's territory and taking from him the customers his rival has secured. Will he, as before the war, haul coal to the customers of another man regardless of distance and even of loss? Aggressive business of this sort creates mutual dislike, counter raids and ill-considered reductions in price. It is shortsighted, futile and demoralizing. With the habit of keeping strictly to his own customers, and with a knowledge that the trip into his neighbor's territory will cost him so many dollars and cents, will he not, wiser now than before, avoid "head-hunting expeditions?"

And then again as to credits. Many retailers feel that they will never again have to keep so much money in "Accounts Receivable." The public has learned the art of prompt payment, and the dealer is little disposed

to let it forget what it has learned. The retailer would rather keep his money in a reasonable stock of coal than expend it in extending credits to his clients. He hopes that, in this matter also, the excellent condition of affairs will not end with the war.

These are matters directly under the retailer's control, but the attitude of the public to the retail dealer is not so closely at his command. The public is beginning to recognize, so the retailer thinks, that the charges of the retailer are based on substantial services. They do not represent merely profiteering. An outside impartial authority, a representative of the public and not of industry, stepped in and regulated the prices the retailers should charge. The authority, skeptical at first, discovers that the prices charged are fair and *have* been fair. Surely the loose accusations of the public must now cease.

These are some of the embers which the retailer hopes to save from the expiring system of fuel regulation. To let them die for want of fanning and fostering care would be the height of folly.

Inadequate Production With Six-Hour Day

BRITISH miners are exhibiting a strangely illogical point of view. Coal in Europe is in terribly short supply. There is therefore a great demand for the work of the miners. There is some doubt, however, whether all will be kept busy because there has been a lack of mine development during the war. When there were no men to fill large extensions of the mines the Government frowned on development work. Every extension demanded labor and yet added little or nothing to production. It was felt that the mine-extension problem could be well left till after the war. The consequence is that with Europe calling loudly for coal and with men to work it becoming numerous, production is halted for want of working places.

Consequently, if men are idle the fault is not in the lack of business, but in the restriction of opportunity for labor. The time when that opportunity will be available will be delayed if mine development is slow, and it will surely be slow if the hours of work are fixed at six per day. Given a six-hour day Great Britain will be hard pressed to meet the demands of business. European industry will suffer. Men will be out of work, or the population will go cold. Some will say that neither of these alternatives will happen, for the United States will supply the coal. In that event the absurdity of restricting production, from a British point of view, will be no less evident. The miner will be handing British markets over to his competitor. Such infatuation as that of the British miners well merits a hard fate. Just who will suffer most and who will gain most is not clear—but it will not be Great Britain.

At its coming Southport meeting the Miners' Federation of Great Britain is expected to ask for increases of from 30 to 50 per cent. and a six-hour day. The miners complain that prices have increased during the war 120 to 130 per cent. and wages only 75 to 83 per cent., the maximum wage now being 12 shillings and 5 pence, or about $3.02 a day.

The output of the average British mine worker is not such as to justify much more than the wage named. Perhaps it is unjust to say it, but most of them appear barely deserving of an increase to which only a larger production would entitle them. We would not, however, essay the unenviable task of determining who is mostly to blame, operators or miners, difficulties in working conditions or a meticulous desire for a No. 1 product.

So much for the wage, let us turn now to the number of hours worked per operating day. If, by working an eight-hour day, there should result an excessive coal output at any time, a few days of idleness every week would be the appropriate remedy. Why try the short-time remedy now when there is no disease? Why apply it at any time when work is plentiful. In fact, why apply the short day even in slack times? After all a whole holiday is better than several extremely short days.

There are some that are complaining that an eight-hour day at the face means a ten-hour day, bank to bank. That is extremely unfortunate. Why cannot the operator cure this undesirable condition by a man trip? In fact it seems that at every extensive mine the man trip is a necessity and an economy, if not for the operator, at least for the industry. The British miner does a short day's work. Can he feel worried about that fact when the operator who employs him views it with complacency and makes the miner oftentimes trudge farther below ground than he trudges on the surface?

It would appear that the unreasonable attitude of the British workman, in face of a shortage at home, should furnish the American exporter with an opportunity, at least, in South America if not in Europe. A six-hour day will prevent developments as well as production. Men, who in the face of need will shorten hours, will do worse—they will render those hours of minimum productivity. The chance is now good, if ever, to put a shaft through the mail of the British export trade. With restriction in working opportunity, reduction in hours worked and deliberate loitering on the job—a trinity of handicaps—how can Great Britain continue to hold her own in the Brazils, the Argentine and the Caribbean?

Mine Workers from Enemy Countries

MANY operators have men in their employ from enemy alien countries and have found these men not lacking in willingness to do a good day's work and thus support the national cause. Nevertheless these men are troubled. They left behind in the country of their birth, a father and mother from whom they learned and inherited those qualities that have made them useful and respected. They do not know what has become of them.

The American Red Cross has a Bureau of Communications with division, state and county headquarters, and through it letters of a personal character can be sent without expense to people residing in enemy countries. If you would help any of your employees desiring to get in touch with the home folks, establish communications with the nearest Red Cross Chapter, get blanks, and have them filled out correctly. Answers can usually be expected from Europe within two or three months' time provided the persons are still alive and in the place addressed.

Better Wait Till the Limb Gets Stouter

The Russian Bolshevist reached for the Government Ownership limb thinking it would carry him. It failed. As he had left the strong support of Private Ownership, and couldn't get back to it, if he really wanted to, he tried Soviet Mismanagement instead. It snapped like a rotten limb, letting him fall to the ground.

Government Ownership is rule by one set of politicians and Soviet Rule is rule by another set. Both will be a failure till men are wise enough to run somebody else's business as well as their own and generous enough to work as hard for the public as they will for themselves.

DISCUSSION BY READERS

Zoning System of Coal Shipments

Letter No. 2—After reading the letter of Ernest B. Ligny, *Coal Age*, Dec. 19, p. 1132, I can hardly refrain from offering a few comments on the matter he has presented. While there is no doubt but that the zoning system established by the Federal Fuel Administration imposes some burdens on a few individual cases, there are two viewpoints from which the question of its benefits should be considered.

Such are the environments of the coal industry in the United States, that the business is and has been in an awkward shape. Competition is strong and the differences in the amount of capital invested by different operators and companies is so great that the successful operation of a coal mine, today, is largely a question of the survival of the fittest. By that I mean those organizations that have the greatest financial resources will overtop and eventually absorb the business of their less fortunate competitors.

Zoning System Has Restricted Unfair Dealing

It would seem that there can be no question but that the zoning system, relating to the marketing of coal, has restricted much unjust and unfair selling of coal, by certain operators, at prices below the actual cost of its production. This will apply particularly to districts lying outside of their legitimate territories.

Allow me to ask, What would be the result if the Empire Coal Mining Co., operating at Bream, W. Va., were permitted to sell its coal in Indiana. While the benefits to that company would be far less than the injustice done to Indiana coal operators, a still greater injury would be done to the coal industry at large, owing to the fact that many of the local Indiana mines would be forced to suspend operations, in order to avoid bankruptcy. The chief benefit of the zoning system is that it prevents large corporations from unloading their surplus production in an outlying territory, too often at a positive loss, in order to keep their mines running on their regular contracts. It is not assumed, however, that this applies to the company just mentioned.

Looking the situation squarely in the face, one finds that it is illegal for operators to combine in the fixing of a standard selling price for their product, which can only be done by the Government in the interest of all. Operators well know what is the average cost of production after making due allowance for overhead charges, depreciation of equipment, etc. And it goes without saying that no government desires that industrial products shall be sold at a less price than the cost of production to which a reasonable profit is added. The fact of the matter is that the root of the trouble lies in the lack of organization controlling the industry.

While many of the members, myself being among the number, who belong to the United Mine Workers of America, have suffered injustice by reason of the union, the principles of the organization, it is generally agreed, are all right. My opinion is that if coal operators were organized in a similar manner, and their activities controlled in the interests of all their operations combined, much good would result by reason of the unity thus established.

Permit me to refer, here, to the Rockefeller Foundation plan as being the only method that will insure justice to operators and employees alike. Let me urge that now is the opportune time, in this reconstruction period. Only by the adoption of some such measures can stability be assured to the coal business of the country, bankrupt methods be eliminated and the industry put on a healthy basis.

It is my impression that the British Government fixed a minimum wage for their miners about eight years ago, and I believe that there will soon be a minimum wage established in the United States. Following that, a minimum selling price will be fixed to conform with the conditions in each coal-producing district.

In my opinion, the zoning system of the shipments of coal, established by the Fuel Administration, was an effort to systematize and economize the distribution of the coal resources of the country. Let coal operators cooperate along the same line and, by organization, establish a unity of action that will develop the industry and invite the investment of much capital that at present must lie idle because of the unrestricted practices of those who have larger resources. W. H. LUXTON.

Linton, Ind.

Locating the Coal Beyond a Fault

Letter No. 8—Regarding the question of locating the coal beyond a fault, described by a correspondent in *Coal Age*, Oct. 24, p. 797, I am of the opinion that the fault mentioned is a downthrow. I also believe that the coal struck in the two boreholes sunk from the surface, beyond the fault, belonged to the X-seam.

It is true that the thickness of the coal, as shown by the results of the boring, does not correspond to that of the X-seam in the workings where the conditions were normal. But, as has already been stated by another correspondent, this reduction of the thickness of the seam has probably been caused by the great pressure incident to the disturbance when the faulting of the measures occurred. It will be noticed that the correspondent informs us that the appearance of the strata, at the face of the main heading in the fault, indicated that the formations had been subjected to a tremendous pressure, as the rock there is very much broken.

My own experience with faulted strata has been gained in the Carbonado coal fields of the State of Washington. The district is noted for its numerous slip and overthrust faults, dykes, pinches, horsebacks, etc., which are characteristic of coal fields where the strata have been contorted and twisted into numerous

anticlines and synclines such as exist in that field and, likewise, in the pitching seams of the Province of Alberta, Canada.

When a fault is encountered my policy has always been to note very minutely the nature of the hanging and footwalls to ascertain if there is any small lead that could be followed. In the absence of any such lead or stringer of carbonaceous matter, it has been my custom to secure samples of the rock at the point where the coal pinched out or the slip occurred. By studying these samples of rock carefully, it has been possible for me to correlate them as belonging to strata known to overlie or to underlie the coal, thereby showing the fault to be a downthrow in the former or an upthrow in the latter case.

Referring to the case in hand, it seems strange that, after going to the expense of drilling two boreholes, a log has not been kept showing the strata passed through. In that case, there should be no great trouble in correlating the different formations, which would have enabled them to arrive at a definite conclusion in regard to the coal struck in these holes.

It is strange, also, that when there was uncertainty in regard to the coal struck, the drilling was not continued to a depth of 50 or 60 ft. below that point, before dismantling the drill and abandoning the hole. The finding of a second seam of coal, at a depth more or less closely corresponding to the distance between the two seams in the workings, would then have given them practically definite information regarding the situation.

Cassidy, B. C., Canada. J. W. POWELL.

The Rock Arch in Mining

Letter No. 1—Interesting conditions, developing what are known locally in Utah as "bounces," are described in an article by A. C. Watts, *Coal Age*, Dec. 5, p. 1028. Mr. Watts describes certain occurrences observed during the driving of a slope in one of the mines of the Utah Fuel Co., "in virgin territory, several hundred feet away from room workings and fifteen hundred feet distant from the nearest pillar operations.

Mr. Watts attributes the excessive pressure, developing bounces and throwing the solid coal violently from the face, to the existence of two approximately parallel faults, which were passed through in driving the slope, stating that beyond the second fault the phenomena apparently ceased.

FAULTED MEASURES PRODUCE ONLY NORMAL PRESSURE

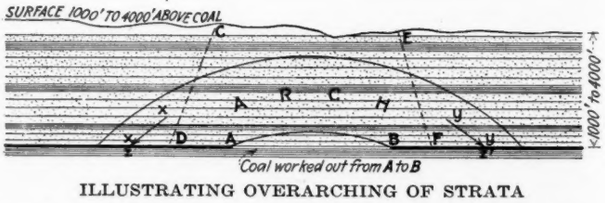
The explanation suggested by Mr. Watts does not seem to account adequately for the conditions described. The cutting loose of a block of ground by fault planes, thereby giving it freedom of movement and allowing its whole weight to rest directly on the coal bed, would hardly explain the great increase in pressure required to break the coal from the face or cause it to flow into an entry or other excavation.

In my opinion, the increase in pressure due to this cause would be limited in extent and would not be found to exist from one fault plane to the other. In other words, the pressure on the coal bed between these fault planes should theoretically be no greater than the normal pressure to which this coal is everywhere subjected by the weight of the overlying rock mass.

Some fifteen or sixteen years ago, in discussing conditions affecting mining operations in the mines of the Utah Fuel Co., I suggested to W. G. Sharp, who, if my memory serves me, was then general manager of the company, and to the late Robert Forrester, then mining geologist to the company, that severe squeezing conditions, giving evidence of very great pressure, might be encountered at considerable distances from where any pillar robbing had been done, and at distances remote from any of the workings affected by the drawing of the pillars.

An increase in pressure, in circumscribed areas remote from actual workings and in what might be termed "virgin territory," it seemed to me, might occur by the transmission of pressure, produced by the weight of the rock mass above such workings, along resultant lines of force such as develop in arched structures. That is to say, the weight of the rock mass above pillar workings will be largely sustained by transmission of the stresses due to the weight to points more or less remote from the workings, unless breaks occur in the rock mass and extend practically to the surface. If the rock mass contains thick beds of sandstone capable of sustaining great sheering stress, the weight of the rock mass will develop resultant stresses just as though it was in reality an arch. Unfortunately, it is impossible to predict the curvature or span of such arch stresses.

The accompanying sketch illustrates this principle, and is intended to represent conditions where the strata



ILLUSTRATING OVERARCHING OF STRATA

overlying a nearly horizontal coal bed are, say 2000, 3000 or 4000 ft. thick and contain thick ledges of hard sandstone, corresponding to the "Book Cliffs" district, in Utah. The sketch shows the coal bed *ZZ'*, as having been mined between *A* and *B*, the curved lines indicating an imaginary arch supporting the rock mass lying above.

Possible sheering or breakage lines are shown by dotted lines *CD* and *EF*. If the rock mass should break along these lines, there would be no transmission of stresses by arching, but the weight of the whole mass *CEFD* would then rest on the comparatively short distances of solid coal *AD* and *BF*, producing a greatly increased pressure between these points.

If, however, the rock mass does not break, the arching of the overlying strata will transmit the pressure far beyond the points *D* and *F*, as indicated by the thrust arrows *xx* and *yy*. The result will be an enormous increase in the pressure on the coal at *Z* and *Z'*. This increase in pressure cannot, of course, be determined, being modified by the pitch or dip of the formation and the possible existence of fault planes along which movement may result.

In the operation of mines in the anthracite region of Pennsylvania, it has frequently been observed that a squeeze developing in a relatively small area of mine

workings will often be quickly followed by another squeezing action, at a point so distant from the first disturbance as apparently to have no connection with it and, perhaps, separated by territory as yet unworked.

On a number of occasions, my attention has been called to occurrences of this kind, and I have no doubt that they have been caused by a transmission of pressure due to the natural arching of the strata when a break does not extend to the surface.

For this reason, it seems important that, in all mining operations in which the coal lies at a great depth below the surface, the pillars left for the protection of slopes, entries, etc., even though remote from pillar workings should be made of great width or thickness, as a precaution against the possible closure of such openings by a concentration of pressure due to arching.

In the case described by Mr. Watts, it seems possible that a thrust, due to arching above the mined territory, may have been transmitted to the block of ground between the two faults mentioned. This being unsupported on its sides and free to move, would certainly transmit a thrust, in addition to its own weight, to the coal and produce the effects described.

While the normal average pressure on a coal bed, due to the weight of the overlying rocks, is about 1 lb. per sq.in., for each foot in depth; or, say 2000 lb. per sq.in., at a depth of 2000 ft. the thrust pressure developed by mining the coal is limited only by the crushing strength of the overlying rocks, which limits their ability to transmit such pressure without crushing or actually flowing.

This limitation may be assumed as being between 6000 lb. per sq.in., for relatively soft or weak rocks, such as slates, shales and soft sandstones, up to, perhaps, 20,000 (?) lb. per sq.in., for very hard and strong rocks, such as granite or trap. If this theory of the rock stresses produced by the unsupported weight of rocks above mined-out areas is true it is entirely possible, in the vicinity of mined areas, to encounter at moderate depth rock pressures as great as would be found normally only at depths of from 6000 to 20,000 (?) feet. H. M. CHANCE.

Philadelphia, Penn.

Efficiency in Firebossing

Letter No. 2—I was interested in reading the letter of F. G. J., in regard to firebossing, *Coal Age*, Dec. 19, p. 1133, and particularly in his reference to "men who have struggled from the bottom to the top, via the fireboss route." Speaking from an experience of 20 years, in firebossing, I believe there are few men who are fortunate enough to have the opportunity of climbing the ladder by this route.

The mine foreman, from my observation, is prone to regard the fireboss as a necessary evil. That is particularly true when the foreman has never been a fireboss himself. I regret to say that there are many of this type of foreman in our mines; they have not climbed to their present eminence by the "fireboss route"; and experience leads me to conclude that more efficient ventilation would result in our mines if that had been the case.

The treatment that the fireboss receives from the average mine foreman is not encouraging. Our friend who wrote the letter to which I have just referred suggests that the mineboss should teach the fireboss all he can so that he will be able to take his place and act for him in his absence. There are, perhaps, some foremen who will do this, but the most of them prefer to keep the fireboss at his own job. They are seemingly afraid of losing their own place if there are other men who are prepared to take it.

As our friend states, conditions and laws governing mining are different in almost every state. In Indiana, the law requires that every working place where firedamp is known or supposed to exist shall be carefully examined with a safety lamp, by a competent fireboss, immediately before each shift. The fireboss must leave, at the face of each place examined, evidence of his presence there; and no person is permitted to enter a mine generating firedamp, until it has been examined by a competent fireboss and found to be safe for work.

PRACTICE OF FIREBOSSES IN INDIANA MINES

It is the custom of our firebosses to enter the mines at 12 o'clock midnight. Where there is more than one fireboss each man examines his own section, which takes him from four to six hours to complete. Believe me, the work he must do is not easy. While I have never seen or heard of firebosses being compelled to dig coal in their spare time, a few years ago I had to put in my idle days in setting timbers and clearing up airways, or doing other work of a similar nature. Now, firebosses are scarce; conditions have changed and, as a rule, the men are treated better than formerly.

Speaking of promotion, however, after holding one job two and one half years, there was an opportunity for getting a better place and I went after it, only to be told that I was all right where I was. That, naturally, did not satisfy me, and my advice to the fireboss who wishes promotion and is "passed up" for some friend or relative of the management, is to look at once for another place.

I will close by saying that the greatest efficiency, in firebossing, can only be attained when the fireboss is regarded as something better than a "necessary evil." In my opinion, a man should start at firebossing, and if he can produce the goods should be advanced as the opportunity offers. FIREBOSS.

——, Ind.

Letter No. 3—It is gratifying to note that the question regarding the work of firebossing is again up for discussion in *Coal Age*. While the remarks on this subject partake largely of the nature of those made a year ago when the question was treated along somewhat different lines, my attention has been arrested by the claim set forth in one letter: namely, that the fireboss should never, under any circumstances, be called upon to do anything else than his own particular work.

Now, I have no desire to belittle the importance of the fireboss; but I want to take exception to this statement of F. G. J., *Coal Age*, Dec. 19, p. 1133. He states, further, "The fireboss should be and is, in many mines and in many respects, as important as the foreman." The duties, difficulties and responsibilities of a fireboss, cannot compare with those of his mine foreman.

In a large mine, there is usually ample work for the fireboss to perform that will occupy his whole time. But,

in a small mine, it does not require a great stretch of the imagination to see that a fireboss will often have time to busy himself looking after a pump, laying a piece of track, setting needed timbers, or other similar work that must be done.

In the case last mentioned, that of a small mine, it is my opinion that a fireboss can rightly and properly be asked to do such work. All other workers around the mine are frequently called upon to do other than their regular work, and why should not the fireboss do likewise? Is a fireboss any better than an assistant foreman, who is often called upon to perform these extra tasks? Is he any more important or deserving of more consideration than the assistant to the foreman?

Before closing, let me say, in answer to the question propounded by F. G. J., in the fifth paragraph of his letter, by saying, emphatically, yes. A foreman certainly promotes efficiency when he starts a fireboss at other work for which he has ample time without interfering with his duties as fireboss. The foreman would certainly be promoting inefficiency, in the mine, if he did not do that, or lay the fireboss off when his particular line of work is completed. The fireboss would certainly holler if that was done. EDWARD H. COXE.

Pittsburgh, Penn.

Efficiency in Mine Management

Letter No. 1—Besides being humorous and, indeed, too true, the article entitled "Need of Efficiency in Coal Mining," *Coal Age*, Nov. 28, p. 983, touches upon a vital point in coal mining and, no doubt, in other allied industries as well. Who of us has not seen all and many more of the wasteful practices mentioned in that article?

During the continuance of the war, all industries suffered alike from labor shortage. The conditions we have experienced should cause us to realize, now, the need of more concentrated effort toward efficiency; and, in no industry, is this more important than in that of coal mining. Because of inadequate or antiquated equipment, many coal operations have been forced to shut down; whereas, had they been developed on an efficiency basis, they could have survived the conditions brought about by the war. Many times have I been severely criticised by friends and clients for the constant preachment of "efficiency." Others, I believe, have had a like experience; but happy is the man who can see light breaking in darkness.

REMARKABLE TRANSFORMATION QUICKLY MADE

One incident that I recall with some pride occurred when I was called by a friend to investigate a property in which he was interested. He gave me authority to go ahead, make improvements, changes, in fact, do anything that would make the mine pay. This mine had little in its favor, except a good grade of clean coal. Transportation was difficult; material, sky high; labor, hard to get and more difficult to hold. Development was at a standstill. A trip through the mine followed by a survey of the conditions was enough. To me, it was a revelation that the crisis had not been reached long ago.

Six months later—it seemed an incredibly long time—conditions were reversed. There were new houses for the men and uptodate equipment wherever possible; but the greatest fact of all was the contentment of the men. Though labor in that district was and is yet scarce, the mine has not lost a day since taking on its new life, and is now producing a startling tonnage. More remarkable yet, this transformation took place within the period included by the months of March and August of this year. "Efficiency" was the watchword and it has proved a boon.

MISTAKEN IDEAS OF EFFICIENCY

There are those, no doubt, who can preach efficiency to the extreme. One such case that recently came to my attention was that of a property employing 130 men and keeping three bookkeepers busy in the office. The answer to my inquiry forced a smile. "Oh! We are working out a pet scheme of one of the bosses. 'Efficiency,' he calls it; and a little slip must be made out every time we turn around. Last month it was necessary to hire seven men to go about and check up the other fellows, and these two extra pen-pushers must put it down in black and white.

"The other day, the big boss came to me claiming that our overhead charges were excessive. He had a bunch of papers, stacks of figures, crooked lines and what not. Before he finished he wanted to know what was the matter in the 7-N, stating that every ton of coal from that entry cost 18c. more than from other places in the mine.

"Then he and I went up in the air and, to make a long story short, I frankly told him that if he would come down to earth and hire another tracklayer in place of the nine or ten efficiency experts, I would get coal out of the 7-N for 18c. less than any other place in the mine. Perhaps that was going some, and I expected he would fire me for being too d—— fresh."

This is by no means an extraordinary incident; it is a case of misguided energy. A level-headed analysis of working conditions and a better understanding of men would have been successful, where a wrong application of a good thing brought only failure.

Golden, Colo. F. L. SERVISS, SR.

Freezing of Shaft in Winter

Letter No. 9—Regarding the discussion of preventing the freezing of a mine shaft in winter, let me say that the mine foreman or superintendent who has not yet learned to eliminate this difficulty in his mine has yet one hard problem to overcome. Conditions differ in every mine, in this respect, and each case presents a separate problem for study.

I well remember an incident that occurred some ten years ago at a mine where I was employed as fireboss. The winter was well advanced and the air, at the working faces, had gotten so poor that it became necessary to investigate and ascertain the cause. So, after completing my examination of the working places in my section that morning, in company with another fireboss, I started out to find what was wrong with the ventilation.

Knowing it to be zero weather outside, we proceeded at once to the foot of the downcast shaft and, to our surprise, found it almost completely blocked with solid ice. The opening through which the air was passing

into the mine was, to the best of my knowledge, 2 x 2 ft., giving an area of about 4 sq.ft. It was clear to us, at once, that here was our trouble, and we lost no time in getting to the surface.

The condition of the ventilation in the mine workings and its cause, as we had discovered it, was reported promptly to the foreman and superintendent. But I do not hesitate to say that, at that time, these officials were wholly ignorant in regard to the best means to be adopted to rid the mine of such a difficulty, and prevent the further formation of ice in the downcast shaft. However, four men were quickly dispatched to the shaft, with instructions to dig out the ice and wheel it back to some place in the mine where it could be stowed away, which proved to be no easy task, as will soon appear.

The Work of Digging Out the Ice

The downcast shaft, at this mine, was divided by a partition that separated the manway from the air shaft. Descending the stairs in the manway, the men sent to perform the work of cutting away the ice were obliged to take out a few boards in this partition before they could reach the shaft bottom and begin work. The air was so keen and the current so strong, that a man could not remain in the shaft longer than three minutes at a time, and it was necessary to take a turn about until the area through which the air was passing had been enlarged sufficiently to reduce the velocity of the current. Anyone who has had experience in a similar undertaking can understand that it was no pleasing task we had in hand.

Now, regarding the best means of preventing ice trouble in a downcast shaft, in winter, let me advise extending the exhaust pipe line from the fan house to the top of the downcast shaft. Then, from this point, carry two smaller pipe lines a distance down the shaft. A valve should be placed in the main pipe, which conducts the exhaust steam to the top of the shaft, and this valve should be closed when the steam is not required in the shaft, in more moderate weather.

Advice of Scotch Miner Taken

It was not long after the occurrence of this incident that a Scotch miner told the superintendent of this plan for avoiding the ice trouble, by conducting the exhaust steam from the fan into the shaft. The superintendent acted upon the suggestion at once; and, I am glad to say that, from that time on, no further trouble was experienced with the formation of ice in the shaft at that mine.

Before closing, however, let me warn any who may adopt this method of overcoming the ice trouble in a wet shaft, that it is necessary to keep the fan running at normal speed, in cold weather when ice would be formed in the shaft. I would even suggest the speeding up of the fan at such a time. This will not only give a larger volume of exhaust steam entering the downcast shaft; but it will increase the volume of warm air ascending the hoisting shaft and keep that shaft and guides in good condition. It is important to remember that if the night fireman is allowed to let his steam get low, and the fan is run below the normal speed, trouble will be apt to follow. The slogan to adopt is: A small amount of exhaust steam in the shaft is worse than none at all, as it will only assist the formation of ice at the shaft bottom and do more harm than good.

Poston, Ohio. J. H. Taylor.

Inquiries of General Interest

Calculation of Runaway Track

On the Wheelwright division of the Elkhorn Coal Corporation's mining properties, we have what is commonly called a "runaway track." This track starts from the cutoff switch at the foot of the incline leading from the tipple to the mine slope and is constructed on such a vertical curve that it will retard and bring to rest a car that may chance to get loose and run wild into the mine. The cutoff switch is always set for the runaway track.

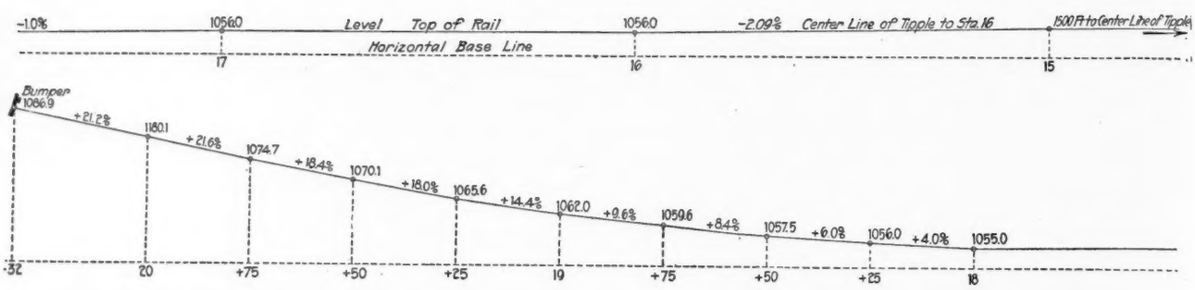
Being up against this proposition, we have made some calculations, but desire to submit our results to the Inquiry Department of *Coal Age* and ask for their revision. What we desire to know is the speed at which a wild car, getting loose on the tipple and starting from rest at Sta. 0, which is the center line of the tipple and head of the incline, would reach Sta. 18, where the upgrade of the runaway track begins. Also, at what point on the upgrade of this track would the wild car be brought to rest. Following are the data entering into this proposition and necessary for the calculations:

As shown on the accompanying profile, the incline leading from the tipple has a uniform downgrade of 2.09 per cent. or from Sta. 0 to Sta. 16, 1600 ft. Then, there is a level stretch of 100 ft. to Sta. 17, followed by a 1 per cent. downgrade to Sta. 18, where the upgrade of the runaway track begins.

The profile shows the variation of upgrade, in 25-ft. lengths, corresponding to the vertical curve of the runaway track. In this calculation, assume a straight track from the head of the incline on the tipple to the bumper at the end of the runaway track, and a good condition of track throughout. Assume, also, a 55-ton car loaded with coal, the gross weight being 66½ tons. The estimated length of the runaway track is, as shown on the profile, 232 feet. Division Engineer.

Wheelwright, Ky.

The runaway car, in this case, moves under the action of gravity, which is resisted in part by a force known, in haulage, as the "track resistance." The accuracy of the calculation will depend on the actual track



PROFILE OF TRACK FROM TIPPLE IS SHOWN ABOVE, AND BELOW IS THAT OF THE RUNAWAY TRACK

resistance, which we will assume is 20 lb. per ton of moving load. There are three phases to be considered: (1) On the downgrade, the net force producing motion is the gravity pull due to the inclination, less the track resistance. (2) On the level stretch, there is no gravity pull, and the movement of the car is retarded by the track resistance only. (3) On an ascending or upgrade, the movement is retarded by a force F, which is equal to the sum of the gravity pull due to the grade and the track resistance.

This calculation is based on the work performed by the force F, moving through a distance or space s, being equal to the amount of energy stored or given out for any given change in velocity. If the forces act to produce motion, the change of velocity is $v_2 - v_1$. On a level stretch or an ascending grade, the forces act to retard movement, and the change of velocity is then $v_1 - v_2$.

Calling the force acting to produce or retard motion F (lb.), and the mass M of the car or its weight W_t (tons) and any two velocities considered v_1, v_2 (ft. per sec.), the two basal equations employed are the following:

Downgrade,

$$Fs = \tfrac{1}{2}M(v_2^2 - v_1^2) = 2000\frac{W_t}{2g}(v_2^2 - v_1^2) \qquad (1)$$

Level or upgrade,

$$Fs = \tfrac{1}{2}M(v_1^2 - v_2^2) = 2000\frac{W_t}{2g}(v_1^2 - v_2^2) \qquad (2)$$

Now, calling the angle of inclination a, the gravity pull, in pounds, is 2000 W_t sin a; and since the track resistance is assumed as 20 lb. per ton of normal pressure, it is $20W_t$ cos a; which gives the following expressions for the force (F), acting either to produce or retard motion, in the three phases mentioned:

Downgrade, $$F = 2000W_t\left(\sin a - \frac{\cos a}{100}\right) \qquad (3)$$

Level, $$F = 20W_t \qquad (4)$$

Upgrade, $$F = 2000W_t\left(\sin a + \frac{\cos a}{100}\right) \qquad (5)$$

Then, combining Equations 1 and 3, and solving with respect to v_2, which is the velocity due to acceleration by gravity through a distance or space s, on a plane whose angle of inclination is a, we have,

Downgrade, $$v_2 = \sqrt{v_1^2 + 2gs\left(\sin a - \frac{\cos a}{100}\right)} \qquad (6)$$

Again, combining Equations 2 and 4, we obtain for the retarded velocity v_2, after passing over a level stretch or distance s,

Level, $$v_2 = \sqrt{v_1^2 - \frac{2gs}{100}} \qquad (7)$$

Finally, combining Equations 2 and 5, we have for the retarded velocity v_2, due to ascending a plane whose angle of inclination is a,

Upgrade, $$v_2 = \sqrt{v_1^2 - 2gs\left(\sin a + \frac{\cos a}{100}\right)} \qquad (8)$$

It is necessary, first, to find the value of the expression in parenthesis for the given grade, which is 2.09 per cent. from Sta. 0 to Sta. 16, and the value, in this case, is 0.011. Then, assuming the runaway car, weighing 66.5 tons, starts from rest at Sta. 0, $v_1 = 0$, and $s = 1600$ ft. Substituting these values in Equation 6, we have for the velocity of the runaway car, at Sta. 16,

$$v_{16} = \sqrt{2 \times 32.16 \times 1600 \times 0.011} = 33.65 \textit{ ft. per sec.}$$

From Sta. 16 to Sta. 17 is level; $v_1 = 33.65$ and $s = 100$ ft.; and substituting these values in Equation 7, we find, for the velocity of the car at Sta. 17,

$$v_{17} = \sqrt{33.65^2 - 2 \times 32.16 \times 100(\tfrac{1}{100})} = 32.67 \textit{ ft. per sec.}$$

From Sta. 17 to Sta. 18 is a downgrade of 1 per cent. Hence, substituting the values $v_1 = 32.67$; $s = 100$; sin $a = 0.01$; cos $a = 1$ in Equation 6, we have

$$v_{18} = \sqrt{32.67^2 + 2 \times 32.16 \times 100(0.01 - \tfrac{1}{100})} = 32.67 \textit{ ft. per sec.}$$

On this stretch, it happens that the gravity pull is equal to the resisting track resistance and there is no change in velocity. The car has now reached the foot of the upgrade, which is 4 per cent. for a distance $s = 25$ ft.; and substituting the necessary values in Equation 8, we find for the velocity of the car at Sta. 18+25,

$$v_{1825} = \sqrt{32.67^2 - 2 \times 32.16 \times 25(0.04998)} = 31.42 \textit{ ft. per sec.}$$

In like manner, the velocity is found for each 25 ft. of distance and the respective grades shown in the figure, giving the following results: $v_{1850} = 29.58$ ft. per sec.; $v_{1875} = 26.91$ ft. per sec.; $v_{19} = 23.55$ ft. per sec.; $v_{1925} = 17.60$ ft. per sec.; $v_{1930} = 2.12$ ft. per sec.

At this point it is necessary to solve Equation 8 with respect to s, which gives

$$s = \frac{v_1^2 - v_2^2}{2g\left(\sin a + \frac{\cos a}{100}\right)} \qquad (9)$$

Then, making $v_2 = 0$, we find, for the distance in which the car will be brought to rest, on this 18.4 per cent. grade, $s = 0.37$ ft., or Sta. 19 + 50.37.

EXAMINATION QUESTIONS

British Columbia Examination, Third Class, Dec. 17, 1918

(Selected Questions)

Ques.—Describe the various instruments which you, as a fireboss, would use to determine the condition of the mine atmosphere, the quantity of ventilation, and general condition in the air-courses.

Ans.—The temperature of the mine atmosphere is ascertained by means of a good thermometer, similar, in all respects, to the common house thermometer. The humidity of the mine air is calculated from the difference of readings of a wet- and dry-bulb thermometer. This instrument is called a hygrometer. The drier the atmosphere, the more rapid the evaporation of water from the wet bulb and the greater the difference of the readings of the two bulbs, which shows an increased humidity of the air.

The quantity of air in circulation is measured by an anemometer. This instrument consists of a vane having inclined blades and mounted in a suitable frame equipped with dials that mark the number of revolutions made by the vane, each revolution corresponding to 1 ft. of air-travel. A watch for determining the time the instrument is exposed and a tape for measuring the size of the air passage are necessary to calculate the volume of air in circulation.

The water gage, consisting of a U-shaped glass tube mounted on a suitable base is used to determine the difference in pressure between two airways. The greater pressure on the intake airway causes the water to fall in one arm of the tube and rise in the other, the difference in the water levels indicating the pressure producing the circulation. Each inch of the water column corresponds to 5.2 lb. per sq.ft. of pressure.

The barometer is used to determine the amount of atmospheric pressure, which indirectly affects the mine atmosphere by permitting the expansion of gases from the waste and void places in the mine. A decrease of atmospheric pressure indicated by a falling barometer gives warning of an increased gaseous condition of the mine air. The barometer consists of a glass tube closed at one end. The tube is filled with mercury and inverted, the open end being submerged in a vessel of mercury. The pressure of the atmosphere on the surface of the liquid in the basin supports the mercury column in the tube. The mercury column rises and falls as the atmospheric pressure increases or decreases.

Ques.—Describe some system of working a coal seam with which you are acquainted, giving sketches if necessary.

Ans.—The simplest and most effective way of extracting coal from a seam is the method known as the longwall system of mining, whenever this system can be applied successfully. In longwall mining, all of the coal is taken out as the working face is advanced. A solid pillar of coal may or may not be left around the shaft bottom when the work is started. The development proceeds equally in all directions and the working face is approximately a circle or an arc of a circle. As the coal is taken out, the roof settles gradually and uniformly on the waste, which is built up as solid packwalls, a short distance back from the working face. The area at the face is supported temporarily on timbers, which are drawn and reset as the face is advanced. No powder is required for blasting, but the coal after being undermined is broken down by the pressure of the roof. The success of the longwall system depends chiefly on maintaining a uniformly traveling weight on the coal.

Ques.—Describe, in detail, how you would remove a body of gas from a pair of rise headings.

Ans.—First, withdraw all the men working on the return of these headings. Then, start by increasing the quantity of air ventilating the headings and watch the effect. Use only safety lamps of approved type, and make frequent tests to observe what progress is being made in moving the gas. It may be necessary to start a brattice from the mouth of the intake on the gangway and extend it gradually up the rise, allowing the gas-charged air to return behind the brattice. By this means, the gas is gradually removed from the first heading, up to the last open crosscut. When this is reached, the return should be made to pass out through the crosscut, the main line of brattice being extended to the face of the first heading until the gas is completely removed, after which a similar method must be employed by extending a brattice from the last open crosscut to the face of the second heading, until that gas has been removed. It is frequently difficult to remove gas from the face of rise headings, if the gas is warmer and lighter than the mine air.

Ques.—Describe the various means, appliances and fixtures necessary to properly conduct the air current to the various parts of the mine.

Ans.—In conducting an air current throughout a mine, there are required doors, stoppings, air bridges, either overcasts or undercasts, and brattices. Doors mounted in substantial frames set in the airways are made to open against the air current, so that the pressure of the air will keep them closed. A door must be set with sufficient fall to prevent its standing open when not blocked. A stopping is a wall or partition built in a crosscut or passage so as to close the opening to the circulation of air. An air bridge may be either an overcast built above a roadway, or an undercast built in the floor, the purpose being to conduct an air current across the roadway without interfering with the air passing on the road. Overcasts are much preferred to undercasts, as they are less liable to be blocked by an accumulation of water or blackdamp. The term "brattice" is sometimes applied to a wooden stopping, but more commonly refers to a partition of canvas or wood extended along the rib of an airway or other passage to conduct the air to the face. At times, flexible tubes of canvas are used for this purpose.

What Happened in 1918

[Unless otherwise indicated, the bracketed figures in the text refer to pages in the last two volumes and the present volume of *Coal Age* and should the reader desire further information he can obtain it by reference to the pages indicated.]

January

Jan. 1—Mine workers of the Carterville Big Muddy Co. at Cambria, Ill., work on New Year's Day, giving their wages and the company giving its profit to the American Red Cross [XIII, 164].

Jan. 5—Judge Robert S. Lovett, Director of Priority, declares that the "tag system" of giving priority to every car tagged by a Government official, however competent, was cause of car shortage [XIII, 62].

Jan. 10—To save fuel, manufacturers of boxboard agree to close down from 7 A.M. on Saturdays till 7 A.M. on the following Monday.

Jan. 12—Alabama operators ordered to accept Fuel Administration's decision [XIII, 152]—Mine explosion at Minnie Pit of Podmore Hall Colliery, Halmerend, South Staffordshire, England, of the Midland Coal, Coke and Iron Co., Ltd., in which about 160 men lost their lives [*Colliery Guardian*, XCV, 134, 383].

Jan. 14—Francis S. Peabody, Chairman of Committee on Coal Production, testifies before Senate Investigating Committee [XIII, 146]—State Fuel Administrators are given power to divert coal and coke where such diversion is necessary for the assistance of coal-using industry [XIII, 202]—Captain of the Birchenwood Colliery No. 1 rescue team loses his life in rescue work, the reducing valve not being rightly adjusted [*Colliery Guardian*, CXV, 383].—Senate passes Walsh-Pittman coal and oil-lands leasing bill for the general leasing of coal, oil and gas, and sodium lands.

Jan. 15—United Mine Workers Biennial Convention assembles at Indianapolis, Ind. [XIII, 153].

Jan. 17—Referee in bankruptcy orders sale of 12,000 acres of land of J. V. Thompson to H. C. Frick Coke Co. for $500 an acre [XIII, 216]—Francis S. Peabody testifies before the Senate Investigating Committee urging the necessity for clean coal, the need for the zoning of the coal industry and suggesting a price for coal based on coal thickness [XIII, 201].

Jan. 18—All industries east of Mississippi closed down for workless days [XIII, 163, 200, 293, 336]—Garfield adds long list of firms exempted from the workless days order.

Jan. 21—Interstate Commerce Commission upholds the refusal, under certain conditions, of the Baltimore & Ohio R.R. to supply coal cars to wagon mines [XIII, 201]—United Mine Workers of America approve the Washington Agreement [XIII, 248]—First "workless Monday."

Jan. 23—Explosion at Allan shaft, Stellarton, Pictou County, Nova Scotia, 86 lives being lost [XIII, 252].

Jan. 24—J. D. A. Morrow appointed commissioner with the title of Manager of Apportionment and Distribution for the zoning of all fuel except petroleum [XIII, 290]—Anthracite operators pool all coal at New York City.—The Fuel Administration reduces the prices for run-of-mine coal and prepared sizes produced in the Deerfield or Palmyra fields and the Massillon and Jackson fields in Ohio, 5c. per ton. The price of screenings is raised 45c. [XIII, 251].

Jan. 25—United States Fuel Administrator announces his plan for regulating coal distribution [XIII, 250].

Jan. 26—United Mine Workers of America conclude their biennial session at Indianapolis after advocating earlier in the day that the Interstate Joint Conference be widened to include representatives of other districts than Illinois, Indiana, Ohio and western Pennsylvania [XIII, 243]—Fuel Administrator forbids all unusual hours of labor introduced to evade the law relating to workless day provisions.

Jan. 29—Alabama operators agree to comply with the terms of the agreement proposed by the Fuel Administration through Rembrandt Peale and declare they will not recognize the union but will increase wages if necessary [XIII, 294].

February

Feb. 1—General committee of anthracite operators formed to regulate anthracite industry [XIII, 283, 296].

Feb. 4—Dominion Coal Co. makes an agreement with its men [XIII, 381].

Feb. 5—Order in Council passed by Canadian cabinet suspending operation of all manufacturing plants in Canada Feb. 9-11, closing country clubs during February and March and theaters on Mondays from Feb. 18 to Mar. 25.—J. E. Roderick, chief of Pennsylvania Department of Mines, dies [XIII, 308].

Feb. 6—A. C. Campbell and Tudor Williams, fuel administrators in Luzerne and Lackawanna Counties, order the operators in the anthracite region to prepare their coal, as in former days, with breakers and washeries [XIII, 341, 383, 391, 435].

Feb. 7—Members of the mine-cave committee of the Civic Bureau of the Scranton Board of Trade meet with railroad presidents and heads of coal companies in New York City.

Feb. 8—War Department refuses request of Fuel Administration to exempt mine workers.—Fuel Administrator lifts Monday-closing order from North Carolina, Tennessee, South Carolina, Georgia, Florida, Alabama, Mississippi and Louisiana and gives power to state fuel administrators to withhold coal as well as to divert it.—Dr. H. A. Garfield, United States Fuel Administrator, refuses to Alabama the increase of 45c. per ton in the price of coal granted in other regions.

Feb. 10—Changes in demurrage rules come into effect [XIII, 293].

Feb. 11—L. A. Snead, in charge of apportionment and distribution, is appointed assistant to the United States Fuel Administrator with duties similar to those in the office he vacates.

Feb. 12—Tipple No. 5 of the Jackson Hill Coal and Coke Co. is burned in a fire believed to be incendiary [XIII, 391, 436]—Seward E. Button becomes chief of Department of Mines of the State of Pennsylvania [XIII, 342].

Feb. 13—Fuel Administration announces that as the coal situation has improved the fuel restrictions on Mondays will hereafter be removed [XIII, 336].

Feb. 14—Fuel Administrators of New England declare that under powers delegated to them by the National Fuel Administrator next Monday will continue as a holiday in New England except perhaps in New Hampshire. (New Hampshire was later included.)—Big strike commences in the Alabama field at mines of Tennessee Coal, Iron and Railroad Co., and on Feb. 15 extends to Republic Iron and Steel Co. [XIII, 308].

Feb. 15—Judge Strauss, of Luzerne County, Pennsylvania, reverses decision of Workmen's Compensation Board of that state, the judge declaring that the negligent act of an employee does not defeat his right of compensation [XIII, 391]—Smithing coal put at same price as prepared sizes of bituminous coal.

Feb. 17—Ten members of the National Board of Labor named [XIII, 424].

Feb. 18—Coke prices revised by Fuel Administration in certain coke districts of Georgia, Alabama, West Virginia and Oklahoma.—Fuel Administration orders that prices shall be the same for the same kind of coal whether sold by operator or jobber.

Feb. 18-21—New York meeting of American Institute of Mining Engineers.

Feb. 20—Texas and Montana notify the Fuel Administration that they will take care of their own fuel needs during the war. Anthracite is barred entirely in Montana.—The Fuel Administration classifies coal consumers into four groups with priority in coal delivery in accordance with their importance.

Feb. 21—Fuel Administration fixes price of diverted coal [XIII, 378]—Elias Phillips, mine inspector at DuBois, Penn., dies suddenly [XIII, 436].

Feb. 22—By an explosion of 28 cases of powder at the Royal colliery at Virden 4 men were killed [XIII, 436, 476]—Col. Reese A. Phillips, former general manager, Delaware, Lackawanna & Western R.R. Co., Coal Department, dies at Scranton, Penn. [XIII, 436]—George W. Theiss, president, Theiss-Bygate Co., coal operators of Pittsburgh, Penn., former vice-president of the Monongahela River Consolidated Coal and Coke Co., dies of a stroke [XIII, 436].

Feb. 23—Fuel Administrators of Maine, Rhode Island, New Hampshire, Vermont, Connecticut and Massachusetts have decided to suspend "heatless Monday" under the United States Fuel Administration order of Jan. 17.—A. W. Calloway, of the Davis Coal and Coke Co. and the Terminal Railroad Coal Co., is appointed Director of Bituminous Coal Distribution [XIII, 423]—Four shotfirers are killed in an explosion at the mines of the Citizens Coal Co., at Springfield [XIII, 436, 476, 565].

Feb. 26—The Fuel Administration demands greater coal conservation [XIII, 424]—Senator Reed attacks the Fuel Administration in the Senate.

Feb. 27—Frank P. Walsh chosen by American Federation of Labor to serve on the National Board of Labor.—Independent Union of Miners of America organized.

Feb. 28—Fuel Administration orders that where cannel and bituminous coal is mixed the Government price for bituminous shall govern [XIII, 462].

March

Mar. 1—Joint committee appointed by Government officials, eastern railroad representatives and mine operators of Pennsylvania, Maryland and West Virginia to apportion cars to meet the railroad-fuel demand [XIII, 461].

Mar. 2—Bill introduced by government of British Columbia for the establishment of an 8-hr. day, bank to bank.

Mar. 4—Public Service Commission holds a hearing relative to the request of A. H. Wiggin, state fuel administrator, that all private power plants in the city of New York be closed down and power requirements supplied by public-service corporations—Coroner's jury brings in verdict to the effect that Stellarton explosion of Jan. 23 was probably caused by act of an alien enemy.

Mar. 6—Priority given to coal by order of Jan. 17 is removed in all states east of the Mississippi except Pennsylvania, Maryland, West Virginia, Ohio and eastern Kentucky [XIII, 512]—Priority is given to New York Central and Hudson R.R. Co. railroad coal over all other coal contracted for.

Mar. 8—Fuel Administration makes regulations for retailing [XIII, 510].

Mar. 9—The Fuel Administration announces that the prices of anthracite will be reduced 30c. per ton from Apr. 1 to Sept. 1 instead of the usual reduction of 50c. in April, 40c. in May and so on till August when only 10c. is usually deducted from the winter circular. It also announces a system of inspection. Summer reductions in Colorado will apply only to prepared sizes on both domestic and steam coal. It shall not apply to lignite.

Mar. 10—British government announces that on Mar. 21 it will proceed to the enlistment of 50,000 miners.

Mar. 21—Several orders dating back to the order of Jan. 30, 1915, relating to the freight rates on anthracite are vacated by the Interstate Commerce Commission and an increase in rate not to exceed 15c. per long ton is added to the freight rate on anthracite [XIII, 633].

Mar. 16—Rules and regulations governing the distribution of coal and coke by persons, firms, corporations and associations subject to license are formulated by the Fuel Administration.

Mar. 20—Manufacturers of box board, who reduced their fuel consumption by running 5 days a week resume their full schedule.

Mar. 22—The Fuel Administration announces new price classification for the entire state of Illinois and for large coal fields in Ohio, Pennsylvania, Virginia and West Virginia.

Mar. 28—New prices are named for Washington, Oklahoma and Arkansas mines [XIII, 632].

Mar. 29—Companies and individuals using special means for eliminating impurities from their coal will be permitted to add 20c. to the Government price at the mine [XIII, 633].

Mar. 30—United States Fuel Administration advises the public to store coal or otherwise there will be a shortage next winter [XIII, 632].

April

Apr. 1—United States Fuel Administration zoning order comes into operation [XIII, 547]—United States Fuel Administration begins the licensing of jobbers [XIII, 546]—State of Indiana goes "bone dry."

Apr. 4—Use of domestic sizes of anthracite for steam-raising purposes condemned by the United States Fuel Administration [XIII, 698]—Price of coke raised 5 per cent. when manufactured east of the Mississippi River and sold west of the Rocky Mountains [XIII, 698]—Fuel Administration orders that the term "foundry coke" shall cover only coke selected for foundry use according to the usual practice—Charles M. Means appointed manager of inspection division, United States Fuel Administration [XIII, 699]—Judge Strauss, of Pennsylvania, rules, in the Joseph Zadwick case, that the corroboration of a second party is not needed to establish the right to workmen's compensation, when a workman dies as the result of a strain received in an isolated part of the mines [XIII, 714].

Apr. 5—R. P. Prager is lynched as an alien spy by mine workers at Collinsville, Ill., [XIII, 704, 705 and 842]—Big strike commences in the Dombrowa coal fields of eastern Russia.

Apr. 6—Central Pennsylvania mine workers decide to put off their threatened strike [XIII, 704]—Third Liberty Loan is offered for sale.

Apr. 9—Wagon mines forbidden to add cost of hauling to Government price when coal is loaded in open-top cars except where coal is bought by a railroad for its own use—Strike commences at Lethbridge, Alta. [XIII, 749]—President creates a National War Labor Board composed of the same members as composed the commission which advocated the formation of the board—Dr. Garfield demands that the price of coal paid by railroads shall be the price set by the Government as the fair and maximum price at the mines.

Apr. 10—Order of Administration requires that smokeless coal shall be delivered only to the bunkers of ships and specifies that contracts for smithing coal made before Feb. 14 will be abrogated if the coal delivered is found not to be a true smithing coal and if the coal is not used, or to be exclusively used, for smithing. [XIII, 747].

Apr. 11—Bottle manufacturers, not making food containers, agree to reduce their output 15 per cent.—The Government takes control of 63 coastwise vessels which added to the fleet owned by the railroads, which are also federally controlled, makes 111 coastwise vessels under Government control, having a rated capacity of 400,000 tons.

Apr. 12—Explosion in the Shoal Creek mine, Panama, Ill., possibly caused by alien enemies [XIII, 749].

Apr. 13—Zone system modified so as to forbid the Pennsylvania R.R. from delivering in Washington or Baltimore, coal produced on the Pennsylvania R.R., the Monongahela R.R. and the Huntington & Broad Top Mountain R. R., and their short line connections in Pennsylvania, West Virginia and Maryland [XIII, 746]—The International Board of the United Mine Workers of America protests against the frequent changes in coal prices, declaring it a large cause of the irregular work at the mines [XIII, 748].

Apr. 16—Strike commences in Georges Creek and Upper Potomac regions, laying 6000 men idle [XIII, 748 and 796]—Wage increase of 50c. per day granted by the Western Fuel Co., British Columbia, to some 1500 employees [XIII, 749]—Senate and House adopt conference report on "Sabotage Bill," which prescribes imprisonment penalties for interfering with war industry; but the punishment provided for strikers is eliminated.

Apr. 17—United States Fuel Administration announces that the Tennessee Coal, Iron and Railroad Co. will submit to the conditions of the Peale contract in Alabama [XIII, 842]—Strike in Georges Creek region comes to an end [XIII, 748 and 796].

Apr. 21—New wages scale signed for Alabama region [XIII, 797].

Apr. 22—"Lightless Night" order suspended till Sept. 1—Delegates from District No. 2 (central Pennsylvania) meet at Dubois, Penn., and decide against a strike and in favor of an investigation of wages by the United States Fuel Administration [XIII, 796].

Apr. 23—Hitchman Coal and Coke Co. decides to withdraw its action against the United Mine Workers of America which related to the enforcement of so-called "ironclad" contracts with working men in its employ [XIII, 840]—Lehigh Coal and Navigation Co. places girls as timekeepers, weigh-scale tenders, switch tenders, etc. [XIII, 841].

Apr. 24—Commercial florists and enameled ware manufacturers agree to reduce fuel consumption 50 per cent.—Joint conference held at Bridgeport, Ohio, relative to a new sale for No. 8-A seam [XIII, 840].

Apr. 25—Contract signed for No. 8-A seam [XIII, 840]—Men working at No. 11 mine of the Old Ben Coal Corporation are ordered back to work under pain of arrest under charges of conspiracy [XIII, 841].

Apr. 26—Meeting of West Virginia coal operators at Huntington to form state operators' association [XIII, 807]—Four collieries of the Nova Scotia Steel and Coal Co. are laid idle by a "holiday" of indefinite length, a holiday being taken because the mine workers are forbidden by law to strike.

Apr. 27—New zoning arrangements made in regard to shipments in box and stock cars and to the shipment of smithing coal [XIII, 835]—S. E. Button, chief of the Department of Mines of Pennsylvania, agrees to issue orders against the employment of girls in and around anthracite mines [XIII, 841]—Meeting of would-be seceders from the union [XIII, 796]—Extensive modifications are made in the zoning regulations.

Apr. 29—The United States Fuel Administration increases price of coke 60c. per short ton where the coke is for export to foreign countries or for transport to a possession or dependency of the United States. The 5 per cent. on coke shipped across the Rocky Mountains may be added to 60c. under this order [XIII, 837].

May

May 1—The 45c. allowance is conceded to the coal operators of Alabama—The Department of Mines of Pennsylvania declares its intention to enforce the law prohibiting women from doing anything but clerical labor about the mines [XIII, 841, 859, 886]—A cave-in at the White Coal Co., Pittston, Penn., destroys 20 houses and kills one man and injures another [XIII, 889]—Parrish Colliery breaker, now belonging to the Lehigh and Wilkes-Barre Coal Co., falls but without casualties [XIII, 889]—New concrete breaker is started by Delaware, Lackawanna & Western R.R., Coal Department, near Storr's breaker, Dickson City, Pennsylvania [XIII, 946].

May 2—Railroad Administration announces that it has let contracts for the construction of 100,000 freight cars—Special convention of mine workers is held at Birmingham, Ala., to consider the recent wage increase tentatively accepted by the union officials for the mine workers in that state.

May 3—Special orders providing for the diversion of coal to New England, issued during the critical period of last winter, are revoked by the Fuel Administration [XIII, 882].

May 4—First issue of "Saward's Journal," a coal trade weekly edited by Frederick W. Saward, former editor of the "Coal Trade Journal"—End of subscription period for Third Liberty Loan—Collision of cages in Loomis shaft of Delaware, Lackawanna & Western R.R., Coal Department [XIII, 898].

May 7—Order announced penalizing the New York and Philadelphia Coal and Coke Co. for providing low-grade quality of coal for the bunkering of a Belgium relief steamship.

May 8—The shipment of coke produced in the New England States to points outside is forbidden. No coke other than petroleum coke and crushed coke for domestic purposes may be shipped into the New England States from Maryland, New Jersey, New York, Pennsylvania and West Virginia [XIII, 933]—Fuel Administration makes preliminary steps in fuel conservation by appointing Thomas R. Brown, of Pittsburgh, Penn., to classify and rate plants as to their fuel efficiency [XIII, 932].

May 9—The Fuel Administrator authorizes the employment of fuel inspectors for anthracite coal—George T. Watson announces that the Consolidation Coal Co. will put in force an equivalent of the Colorado Industrial Plan [XIII, 934, 935, 976, 977]—All the mines of the Broad Top-Huntingdon field of central Pennsylvania but one are on this date found to be on strike [XIII, 934, 976, 1022].

May 14—Manager and a mine blacksmith are killed and three men injured by the explosion of a powder magazine at the Oliphant-Munson Collieries, Coal Spur, Alberta [XIII, 987].

May 15—Meeting of operators of the Central West Virginia Operators' Association with a representative of the Fuel Administration. The association agrees on behalf of its members to put the Colorado Industrial Plan into operation [XIII, 976, 977]—New scale wages goes into operation in Alabama [XIII, 797].

May 18—Decision of Judge Henry in Dauphin County court in favor of three miners who had been docked for dirty coal. Susquehanna Coal Co. directed to pay them $350 [XIII, 978].

May 20—Announcement is made that the railroads will spend about a billion dollars this year for additions, betterments and equipment, said to be approximately three times as much as in any of the last three years [XIII, 1024, 1025]—Fire at gasoline fan in the mine of the Mill Creek Cannel Coal Co., at Villa, near Charleston, W. Va., smothers 13 men and does much damage [XIII, 987, 1033, 1106].

May 21—National Retail Coal Merchants' Association holds its first annual convention at Atlantic City, N. J. [XIII, 986, 987].

May 22—James Brothers' colliery near Pottsville, Penn., is closed down for shipment of dirty coal [XIII, 1033].

May 23—The Fuel Administration requires that permission be obtained before opening a new mine and announces that it will require proof that the new mines will not secure laborers for opening and development from other mines and will not add to the difficulties of the Railroad Administration [XIII, 1021].

May 25—Price of all bituminous coal reduced 10c. per ton, it being announced that the President has ordered the railroads to pay the Government price for coal [XIII, 571, 779, 839, 885, 975, 1020, 1025].

May 27—Freight rates on coal and other shipments raised roughly 25 per cent. by order of Director of Railroads, McAdoo and the Interstate Commerce

Commission. Passenger rates are also increased to 3c. a mile. Railroad gross income should be increased $900,000,000 a year by the new schedules [XIII, 932, 1020, 1021].

May 28—National Coal Association meets for its two-day session, and before it adjourns votes for incorporation [XIII, 933]—John P. White is appointed a representative of the Fuel Administration on the Labor Policy Board [XIII, 1025].

May 29—Fuel Administration prohibits use of coal or oil fuel after June 11 for private yachts.

May 31—James M. Orr, charged with having secured an excessive price for coal, is fined $5000.

June

June 1—Regulation enforcing the production of clean coal comes into effect [XIII, 1068].

June 3—"Coal Week" (lasting till June 8) commences. All purchasers of coal are requested to place orders for all coal they will need prior to Apr. 1, 1919 [XIII, 973, 987]—Mt. Jessup colliery closed down by Fuel Administrator for shipment of dirty coal [XIII, 1083].

June 4—Meeting of mine workers' delegates in the Huntingdon and Broad Top region vote in favor of returning to work pending arbitration [XIII, 1071].

June 5—Operators' Association formed in the new Elkhorn fields, Letcher County, Kentucky, at a meeting held at Whitesburg—Fuel Administrator issues estimates of bituminous coal likely to be needed from Apr. 1, 1918, to Apr. 1, 1919, at 634,594,000 short tons, or 79,866,000 tons more than produced in 1917. This will be an increase of 14.4 per cent. over last year's production [XIII, 1116].

June 7—Production Bureau of United States Fuel Administration is inaugurated, with James B. Neale, anthracite advisor to the Fuel Administrator, as director [XIII, 1162].

June 10—New freight rates under order of May 25 come into effect—United States Fuel Administrator states that the automobile factories will only be allowed 25 per cent. of the fuel necessary to maintain their former production [XIII, 1162].

June 12—Director of Railroads amends order of May 25 by which intrastate rates are placed at the same level as interstate rates [XIII, 1161].

June 13—United States Fuel Administration gives list of precedences in coal distribution [XIII, 1161].

June 14—Fuel Administration of New Jersey removes 56 tons of coal from summer home of John F. Dryden, president of the Prudential Insurance Co. This is the first excessive stock of domestic coal reduced by Government action.

June 17—"Clean-coal" Conference at Kansas City attended by operators, labor leaders and coal inspectors of Oklahoma, Kansas, Missouri and Iowa [XIV, 23]—Cave-in kills three men at Short Mountain colliery, a Susquehanna Collieries Co. operation near Lykens, Penn. [XIV, 23].

June 19—J. P. O'Connor, doing business as the Penn Fuel Co., is deprived of his license as a coal distributor, having sold high-volatile coal as bunker fuel.

June 20—Notice is served on the Tidewater Coal Exchange to dump coal promptly as received and not hold it for foreign bunkering so as to receive the higher price provided for such coal—Short Mountain colliery closes for two days while three men are buried [XIV, 23, 24].

June 21—United States Fuel Administration declares that "Government prices" are maximum prices and that coal may be sold at lower prices to railroad and other customers at the pleasure of the operators.

June 25—James H. Hoover, of McClellandtown, Penn., is made to pay $2500 to American Red Cross for having violated the Fuel Administrator's orders in regard to the shipment of coke and having neglected to make reports as demanded by the Fuel Administration—Freight rates are increased in accord with General Order No. 28, dated May 25, 1918 (XIII, 1020, 1021]—Dr. James Douglas, of Phelps-Dodge & Co., Inc., and of the Stag Canon Fuel Co., dies at Spuyten Duyvil, N. Y. [XIII, 1217].

June 26—Henderson W. Knott appointed to take charge of engineers and inspectors investigating the power plants of the country and making recommendations relative to fuel economy—Coal operators of central Pennsylvania meet in Washington and condemn the giving of bonuses and like wage inducements [XIV, 24].

June 27—Wagon Mine Owners' Association formed at Pittsburgh.

June 28—J. M. Roan is appointed field manager of the inspection section of the United States Fuel Administration [XIV, 21].

June 29—Report of Federal Trade Commission condemning profiteering, the price of coal being quoted as an instance [XIV, 21, 22].

July

July 1—John S. Wentz, anthracite operator, dies at Philadelphia [84].

July 2—Henry F. Shoemaker, Ohio operator, dies in New York City—The Fuel Administration adds 25 inspectors to its staff to watch the preparation of bunker coal [XIV, 22].

July 3—Viscount Rhondda, coal operator, formerly David A. Thomas British Food Controller, dies [XIV, 66]—Fuel Administration prohibits the distribution of gas coal from docks on Lake Michigan or Lake Superior without permission, except to persons engaged in the manufacture of gas or in the operation of byproduct plants—The Fuel Administration reduces coal supply of breweries 50 per cent. [XIV, 67].

July 4—Jewell Ridge Coal Corporation and mine workers donate to American Red Cross all the coal mined on this day [XIV, 70]—Supply of cars to the Huntingdon and Broad Top R.R. is reduced 50 per cent.

July 5—Fuel Administration defines "modified mine run" and prescribes prices [XIV, 67]—Inquiry by Board into the operation of high-cost mines in central Pennsylvania.

July 6—Anthracite Tridistrict Board asks for a higher wage scale to meet increased cost of living [XIV, 79]—Agreement to compensate owners of undermined and wrecked buildings is made in Wilkes-Barre, Penn.—Department of Labor refuses to permit the importation of Mexican labor to mines in New Mexico [XIV, 70]—Fuel Administration orders that the coal furnished to domestic users shall not exceed quantity necessary to heat every room up to 68 deg. Fahr. [XIV, 68].

July 7—The War Labor Policies Board announces the establishment of Community Labor Boards to mobilize labor [XIV, 70, 71].

July 8—Department of Labor limits work of United States Employment Service to manufacturers of war material employing over 100 workers [XIV, 71]—Anthracite Conciliation Board directs that in case of the funeral of the victim of a mine accident the company owning the mine shall pay an additional $150 to the compensation provided by the compensation law if no men lay idle on that day [XIV, 181, 227]—Furnace Run tipple and retarding conveyor near Kittanning, Penn., burned down [XIV, 148]—Battery of 80 Koppers byproduct ovens charged for the first time by Bethlehem Steel Co., Steelton, Penn. [XIV, 193].

July 10—Thirteen men burned in an explosion of gas at the Lackawanna colliery of the Delaware and Hudson Co. [XIV, 148]—Preferential supply of coal cars to mines producing railroad fuel is discontinued—U. S. Fuel Administration announces that brewers can only count on receiving enough coal to complete the manufacture of beer from materials now in process of manufacture [XIV, 134].

July 11—A. H. Smith, Regional Director of Railroads, issues order to speed railroad coal cars [XIV, 133].

July 12—The National Coal Association with a membership producing annually 400,000 tons of bituminous coal declares in favor of immediate prohibition [XIV, 136]—James B. Neale urges coal operators at Fairmont, W. Va., to spend their time at the mines speeding up production [XIV, 229]—Organization meeting of Northern West Virginia Coal Operators' Association held at Fairmont [XIV, 147].

July 13—Fuel Administration prescribes that country clubs may use wood or peat if railroad services are not utilized [XIV, 133]—Production of bituminous coal in the week just ended reaches 13,243,000 tons, the largest weekly production thus far attained in this or any year [XIV, 180, 185, 196]—Harleigh-Brookwood coal breaker near Hazleton, Penn., is burned down [XIV, 193].

July 16—G. B. Markle Coal Co. puts its new breaker at Oakdale in operation [XIV, 193]—Fanhouse of Lehigh & Wilkes-Barre Coal Co., at Tresckow destroyed by fire [XIV, 193].

July 17—John W. Moore, of Columbus, Ohio, has his distributor's license revoked, and the Elk Coal Co., doing business illegally under his liecnse, is required to refund commissions collected by it upon transactions carried on under the license issued to J. W. Moore [XIV, 178]—Explosion of powder magazine of Black Brothers' Coal Co., Blackfield, Penn., kills one man and injures a dozen others [XIV, 194].

July 18—Coal cut off 70 coal dealers who were remiss in filing weekly reports [XIV, 68, 178].

July 19—Fuel Administration provides that in Michigan, Ohio, Indiana and Illinois, domestic anthracite should be distributed first to those communities within the state which would experience the greatest inconvenience, difficulty and suffering by a failure of the supply expected [XIV, 79]—Fuel Administration formulates orders for a reduction in outdoor lighting [XIV, 178].

July 21—German submarine sinks three coal barges and sets fire to the tug pulling them.

July 22—District draft appeal board at Scranton declares that mine clerks and stenographers are not essential workers [XIV, 239, 227].

July 23—President declares by proclamation that he will assume control of the Cape Cod canal July 25, and directs the Railroad Administration to operate it—Fuel Administration appoints a Bureau of Labor, comprising John P. White and Rembrandt Peale [XIV, 228]—Strikes at 14 mines in Michigan for an increase of 10c. per ton in the rate for coal mining [XIV, 277].

July 24—Coal for lake transportation to be given preference over all coal except railroad coal, byproduct coal and coal for illuminating gas [XIV, 226]—New "Lightless Nights" order of July 19 becomes operative [XIV, 178].

July 25—Fuel Administration sets maximum price of domestic coke [XIV, 226]—Prices are set for coal at all Nova Scotia operations by C. A. Magrath, Fuel Controller of Canada.

July 29—Order in Council in Canada gives railroads the right to file increases in tariff rates of 20 per cent. in transatlantic traffic on Aug. 1, to come into effect Aug. 12, and to remain in force to close of war—Scranton Surface Protective Association declares mine-cave agreement unacceptable—John R. Powell, pioneer "squib" manufacturer, dies at Plymouth, Penn. [XIV, 290].

August

Aug. 1—Mines of the Lehigh Valley Coal Co. at Beaver Meadow are flooded by the rising of Sulphur Creek [XIV, 289]—Increase in wage granted in Alberta coal mines to balance increase in cost of living [XIV, 407, 457].

Aug. 2—Order establishing production committees at all local mines—Fuel Administration provides price for "sized screenings" to take the place of anthracite and to be used in magazine or base-burner stoves.

Aug. 3—Announcement is made that retail coal dealers in Minnesota and South Dakota have refunded $16,000 to their local customers, or where these could not be located to the Red Cross—During the week just ended anthracite production rose to a record figure, 1,750,490 tons.

Aug. 5—United States Fuel Administrator condemns the coal operators for "bidding against each other by payment

of bonuses," threatens where bonuses are paid to assume that the coal price allowed is too high and declares that he will order a lower price in such cases—Delegates from 52 unions in northern anthracite field meet and demand a 25 per cent. increase in wages, time and a half for overtime and double time for Sundays without increase in selling price of coal [XIV, 322].

Aug. 8—Fuel consumption of cement plants restricted to 75 per cent. of average quantity of fuel used in other years.

Aug. 9—President Wilson addresses a proclamation to all engaged in coal mining, urging steady work and the duty of miners to claim and accept exemption under the selective service draft [XIV, 319]—All bars are withdrawn restricting the importation of Mexicans for work at coal mines [XIV, 378].

Aug. 16—President Hayes states that "the only logical solution (of labor conditions in the mining industry) is a substantial flat wage increase to be applied to all classifications of labor [XIV, 365]—Dominion Coal Co. announces bonus to shippers and loaders [XIV, 456].

Aug. 17—Fuel Administration provides that the price of coal delivered into the tenders of engines may be 5c. per ton more than that charged for coal loaded in cars for shipment [XIV, 364].

Aug. 21—United States Fuel Administration limits the amount of coal that may be stored by industrial plants [XIV, 405].

Aug. 22—Meeting of district presidents of United Mine Workers to discuss wage increase urged by President Hayes Aug. 16 [XIV, 365]—Interstate Commerce Commission decides that no additional charge shall be made for freight carried in privately owned cars.

Aug. 23—An order is promulgated by the Fuel Administration removing, except as to breweries, till Sept. 8 the restrictions on the purchase and use of slack and screenings west of the Mississippi River [XIV, 319, 363].

Aug. 24—Fuel Administration announces the beginning of the erection of a "Carbocoal" plant near the junction of the Carolina, Clinchfield & Ohio and the Norfolk & Western railways.

Aug. 25—Strike of men of Nova Scotia Steel and Coal Co. to compel four men to retain union membership on their advancement to position as company officials [XIV, 456, 457].

Aug. 28—Explosion at Burnett mine of Pacific Coast Coal Co., Burnett, Wash., kills 12 men [XIV, 525].

Aug. 31—War Industries Board orders West Penn Power Co. in Pittsburgh district, to give coal mines a full supply of power discriminating in favor of coal companies as against all other industries [XIV, 453].

September

Sept. 2—Flood invades Mary Lee mine of Alabama Co. at Lewisburg, Ala., and drowns two men [XIV, 525].

Sept. 3—Rocky Mountain Mining Institute holds annual meeting in conjunction with American Institute of Mining Engineers; to last till Sept. 6 [XIV, 633-641].

Sept. 4—United States Fuel Administration grants companies the right to charge reasonable switching charges for the diversion of coal wherever such diversion has been ordered by the Fuel Administration to relieve a shortage of fuel—Reclamation of breeze is prohibited by the United States Fuel Administration.

Sept. 6—William G. McAdoo declared that railroads would be able to haul all coal needed [XIV, 556]—Judge Edwin B. Parker, the priorities commissioner of the War Industries Board, formulates lists of the priority of works needing new permits or licenses [XIV, 514].

Sept. 7—Arrangement made by United States Fuel Administration by which the Consolidated Coke Co. of Pittsburgh pays $80,000 to the Steel Company of Canada, of Hamilton, Ont., and to the Thomas Iron Co., of Hokendauqua, Penn., for poor coke delivered to them [XIV, 557].

Sept. 9—National Coal Association denies William G. McAdoo's statesments relative to the ability of the railroads to handle all the coal offered to them [XIV, 556].

Sept. 10—By the fall of a cage in the Protection Island shaft at Nanaimo, B. C., 16 miners lose their lives [XIV, 617].

Sept. 11—W. J. Murray, of the Victor-American Fuel Co., dies at La Jolla, Cal. [XIV, 643].

Sept. 12—Tipple of the Ella Mine of the United Coal Corporation falls on tracks of the Pittsburgh & Lake Erie R.R., carrying down three men, who, nevertheless, escape uninjured [XIV, 618]—Logan Coal Co., of Philadelphia, Penn., is fined $25,000 and money is given to Pennsylvania chapter of the American Red Cross, for selling, as smithing coal, coal that was to be used for other purposes.

Sept. 14—Revision of the regulations governing the storage of coal by consumers of different classes [XIV, 602].

Sept. 15—Big production meeting of West Virginia operators held at White Sulphur Springs, W. Va. [XIV, 605].

Sept. 16—Big strike occurs in the southern anthracite field, the miners demanding that the United States Fuel Administration decide, at once, on the increase of wages to be provided [XIV, 607]—Annual congress of National Safety Council at St. Louis meets; to last till Sept. 20 [XIV, 502-503].

Sept. 19—Southern anthracite strike practically comes to an end [XIV, 607]—Meeting of operators, officials of insurance companies, mine inspectors and officials of the Harrisburg headquarters of the Department of Mines convenes in Harrisburg for readjustment of insurance rates particularly for anthracite mines [XIV, 662].

Sept. 21—The mine workers of District No. 1 of the anthracite region protest against the declaration that they are not patriotic [XIV, 650]—Gladstone and Michel locals vote to return to work till single shift is reëstablished—Union leaders in District 18 suggest that an arrangement be made establishing the single shift for 30 days during which time the single shift might be discussed.

Sept. 23—Explosion at the mine of the Franklin Coal and Coke Co., Royalton, Ill., kills 23 men [XIV, 714].

Sept. 24—Elbert H. Gary, chairman of the board of directors of the United States Steel Corporation, declares in favor of the 8-hour day [XIV, 650].

Sept. 25—Mine workers at Fernie declare that they will call out firemen, pumpmen and fanmen if their demand for a single shift is not conceded without reservation and a promise made to give all men work within 30 days [XIV, 748]—C. A. Magrath, fuel controller of Canada, meets Pictou County, Nova Scotia, mine workers and operators and suggests a 20c. per hour increase in wage to the former, retroactive and good till Jan. 1 [XIV, 748].

Sept. 27—Committee on mechanical labor-saving devices in mining appointed—Pictou County, Nova Scotia, strike comes to an end [XIV, 740]—W. H. Armstrong orders that the Crow's Nest Pass Coal Co. work single shift and proposes that a Royal Commission review the dangers in the mines of the company and report with recommendations [XIV, 748].

Sept. 30—Gladstone local in Fernie, B. C., turns down proposition conceding the single shift but providing for the appointment of Royal Commission to ascertain just what attitude should be taken toward the practice of running a mine more than one shift in 24 hours [XIV, 748].

October

Oct. 3—Wage meeting of Anthracite Conciliation Board with union men and representatives of the Fuel Administration is held at Washington, D. C. [XIV, 703]—Director of Education of the Fuel Administration appointed [XIV, 699].

Oct. 7—Gladstone and Michel mine workers in Calgary field, British Columbia, vote to return to work under provision of Sept. 27, of Dominion Director of Coal Operations [XIV, 748].

Oct. 9—Conlon mines fall in and cause much damage at Plains in anthracite region of Pennsylvania.

Oct. 12—Fourth Liberty Loan drive commences [XIV, 654, 704, 750]—Announcement is made of the Anthracite Wage Agreement as proposed and accepted by the wage board but not yet made operative [XIV, 701, 703, 705, 789].

Oct. 13—Fourteen bodies are recovered from the north mine of the Franklin Coal and Coke Co., at Royalton, Ill., victims of the fatal explosion of Sept. 28 [XIV, 714, 760].

Oct. 16—United States Fuel Administration authorizes an increase in the reserve stocks of coal held by all classes of consumers except Class 1 east of the Mississippi River.

Oct. 18—Announcement is made that the United States had offered to place at the disposal of the Dutch government 100,000 tons of coal monthly till the end of the war on condition that food be not sent to Germany [XIV, 800, 827, 865].

Oct. 24—New agreement in Vancouver Island, B. C., with wages increased 75c. a day and a sliding scale to adjust wages to cost of living [XIV, 868].

Oct. 26—Dr. H. A. Garfield, United States Fuel Administrator, announces that "the Fuel Administration approaches the winter season well organized with stocks of coal on hand far in excess of the stocks of other years."

Oct. 28—United States Fuel Administration closes 13 small mines producing dirty coal [XIV, 865].

Oct. 31—New anthracite wage scale as forecast Oct. 12 is made operative by the United States Fuel Administration [XIV, 789, 867].

November

Nov. 1—New wage scale in anthracite region comes into effect, having been approved by Dr. Garfield, Oct. 31 [XIV, 789, 829, 867, 908]—Nichol Thompson, Pacific Coast representative of the Fuel Controller of Canada, raises the price of coal in British Columbia 75c. per ton to accord with the wage increase [XIV, 920]—Benjamin L. Flynn, general superintendent, Logan Mining Co., Logan, W. Va., dies of influenza [XIV, 921]—The Fuel Administration declares its intention to commence on Nov. 15 its campaign to provide coal for points in the East, including Pennsylvania, New York, New Jersey and the New England states.

Nov. 2—Fuel Administration announces that 19 more coal mines are closed because their product has been improperly prepared [XIV, 906]—Fuel Administration decides against regulation of opening and closing hours of offices, stores and other mercantile establishments and places of amusement.

Nov. 4—Tipple and boiler house of the Cross Mountain Coal Co., Briceville, Tenn., burned down [XIV, 921].

Nov. 6—New anthracite price schedule agreed upon [XIV, 905].

Nov. 7—Burton L. French introduces into the House of Representatives a bill providing for reconstruction projects [XIV, 952].

Nov. 9—New regulations made regarding "lightless nights"—Regulation made that placing coal in householders' bins shall not permit the retail coal dealer to add more than 75c. to the price.

Nov. 10—Fuel Administration announces that hereafter applications for new railroad switches for use of coal mines shall be filed with local railroad officials and not with the Fuel Administration [XIV, 949]—Fuel Administration announces that New England desires a reduction in its bituminous coal allotment from 30,000,000 tons to 27,300,000 tons [XIV, 950].

Nov. 11—United War Work Campaign Fund Drive starts [XIV, 923]—Armistice is signed by Allies and Germany—Executive Committee of National Retail Coal Merchants' Association favors 2000-lb. ton as standard [XIV, 1053].

Nov. 13—All restrictions on the use of fuel in the production of building materials including brick, cement, lime, hollow tile and lumber are removed.

Nov. 14—Fuel Administration announces that all rules and regulations in force will so remain till the promulgation of the treaty of peace unless revoked by

officers of the Administration [XIV, 949]—Restrictions on clay products and cement set at half those established in the order of Apr. 3 and Aug. 8 respectively [XIV, 950].

Nov. 15—Fuel Administration decides to restrict the operations which it has set on foot to promote the more efficient use of power at mining plants.

Nov. 16—Fuel Administration announces that it will conduct schools of instruction in the cities of Illinois, Indiana and Michigan at which will be explained how bituminous coal can be satisfactorily used as a domestic fuel.

Nov. 17—Fuel Administration rules that smaller sizes of anthracite than pea shall be sold at a price at least 50c. below that established for anthracite of pea size [XIV, 950].

Nov. 19—John P. White, joint director of the Bureau of Labor in the Fuel Administration resigns [XIV, 995]—Fuel Administration announces that certain parts of its work such as the supervision of anthracite and the maintenance of the zoning system cannot be suspended, at least at the present [XIV, 993]—Fuel Administration announces that four more mines have been closed down because of the impurity of the coal produced, making 119 in all.

Nov. 20—United States Fuel Administration announces that instructions have been issued to all camps to release anthracite mine workers [XIV, 993]—"Lightless Nights" are discontinued throughout the country though rulings may still be made by local fuel administrators if in their belief such a regulation is needed.

Nov. 22—Storage limits on bituminous coal are lifted [XIV, 994].

Nov. 25—Arrangements are announced by Fuel Administration under which Pittsburgh consumers are allowed to store their winter's fuel [XIV, 1039]—New prices and regulations made for sale of gas-house coke.

Nov. 26—Fuel Administration speeds up the "Burn Wood" campaign—Embargo of May 5 on coke consigned through New England gateways removed [XIV, 1039].

Nov. 27—Fuel Administration makes changes in consuming zones M-4, M-3, M-2, M-1 and L [XIV, 1083].

Nov. 28—Submarine attacks having ceased coal from two pools is to be permitted to be sold for bunkering purposes—Avondale washery of Delaware, Lackawanna & Western R.R., Coal Department, burns down [XIV, 1052]—Evan D. John, director of the Illinois Department of Mines and Minerals, dies after an illness of five weeks [XIV, 1052].

Nov. 30—Dr. Garfield announces that zoning and coal-price restrictions will probably be removed Dec. 15 [XIV, 1039]—Fire at boiler house of Brownsville Coal Co. does $10,000 worth of damage [XIV, 1094]—New prices made for certain Wise county, Virginia coals, operative Dec. 7—Restrictions removed on use of fuel by florists, window-glass, clay-product and cement manufacturers [XIV, 1039].

December

Dec. 1—District No. 9 (Schuylkill region) of United Mine Workers of America holds its annual convention and raises salaries of its officers 50c. a day from Dec. 1, 1917—Conference of heads of Bureau of Mines and Geological Survey with Fuel Administration at which it is arranged that Conservation Bureau and engineering program looking to development of power near to or at the coal mines shall be turned over to Bureau of Mines and Statistical Bureau shall be taken over by Geological Survey.

Dec. 2—Strike commences in Roaring Creek field of West Virginia [XIV, 1128]—Tipple and chute of Wisconsin Steel Co., Benham, Ky., destroyed by fire [XIV, 1140].

Dec. 3—Strike of 200 men of New River Coal Co. [XIV, 1128].

Dec. 4—Fuel Administration issues order prohibiting an increase of $1.05 in gashouse coke to correspond with rise in the price of anthracite by which the price of gashouse coke was recently regulated [XIV, 1083]—Retail dealers, hospitals, schools, public utilities and government agencies, federal, state and municipal, urged to make their own provision for bituminous-coal supply at once, requisitions of the Fuel Administration for industrial plants being cancelled [XIV, 1083]—Distribution of coke in each state is given to state fuel administrator who is empowered to authorize domestic consumers to use that fuel [XIV, 1083].

Dec. 5—A $50,000 fire at Richard, W. Va., plant of Elkins Coal and Coke Company.

Dec. 7—Convention meets in District No. 1, Wilkes-Barre, Penn., and declares wage scale of Oct. 30 unsatisfactory [XIV, 1127]—Fuel Administration announces that coke may now be reclaimed from coke piles and sold at $5.50 per short ton at the place of recovery—New prices are put in force for such coal mines in Knox and Whitley counties in Kentucky as are operated by members of the Tri-county Blue Gem Coal Operators' Association—New prices become effective at several Virginia mines under orders of Nov. 30 and Dec. 6—Orders of Sept. 19 relative to restrictions on shipment of coal to Canada revoked [XIV, 1083].

Dec. 10—General election of officers, United Mine Workers of America [XIV, 1040, 1127]—Case of Coronado Coal Co. et al against United Mine Workers of America is reviewed by United States Court of Appeals [XIV, 1040, 1128]—R. A. Quin, general manager of Susquehanna Collieries Co., declares it to be the company's intention to reinstate all men on their return from the service of nation [XIV, 1140].

Dec. 11—Mass meeting is held at Charleroi, Penn., at which it is decided to hold a special meeting of delegates from locals to demand a wage increase [XIV, 1127].

Dec. 13—N. S. Schroeder is appointed Director of Bureau of State organizations, vice Evans Woollen, Acting Director.

Dec. 16—Virginia coal prices are codified and coal zones F-1 and F-2 modified. Under latter, coal from all operations in eastern Kentucky along Louisville & Nashville R.R. may be shipped to all points in Indiana located on and east of the Chicago, Indianapolis & Louisville R.R., from Louisville to Michigan City for industrial purposes only, and to all points in the lower peninsula of Michigan without restriction [XIV, 1126].

Dec. 17—Agreement between Northern West Virginia Coal Operators' Association and the United Mine Workers of America, District No. 17, agree on wage scale at Fairmont, W. Va. [XIV, 1170] George B. Markle Coal Co. introduces Mexican laborers into the mines. [XIV, 1170]—Fuel Administration modifies producing zone M-2 and enlarges consuming zone M-2—Logan and Kanawha coal is permitted to go eastward in Virginia and West Virginia on the new line of the Chesapeake & Ohio R.R., including tidewater and terminal points [XIV, 1169].

Dec. 19—Premature shot kills two miners near Providence, Ky. [XIV, 1182].

Dec. 20—Fuel Administration modifies bituminous coal zone P-1 so as to permit all-rail shipment of bituminous coal on the Baltimore & Ohio, the Western Maryland and Pennsylvania to all points in New England; also modifies bituminous coal zone P-2 to permit the shipment of bituminous coal from all districts of Pennsylvania to Baltimore and vicinity, and to the District of Columbia [XV, 22].

Dec. 21—Strike for an early payday at Storrs and Diamond collieries of Delaware, Lackawanna & Western R.R. Co., Coal Department. Last till payday [XV, 24]—Explosion at the Havaco Mine of the New River Pocahontas Consolidated Coal Co., at Havaco, near Welch, W. Va., kills two men. Two rescue men are overcome by afterdamp when masks leak [XV, 35].

Dec. 22—Fuel Administration announces that zone regulations and maximum prices on coal will not be removed before Feb. 1, 1919.

Dec. 23—Wilkes-Barre Coal Co. of New York City requested by Federal Fuel Administrator of State of New York to pay $50 to American Red Cross as penalty for delivering coal without a permit to the customer of another dealer. Paid about Jan. 8, 1919.

Dec. 24—Fuel Administration announces that coal may be sold for export without a permit [XIV, 1169].

Dec. 27—Fuel Administration orders that where anthracite coal is obtainable by-product coke shall be sold at not more than the price charged under the regulations governing the sale of gas coke. This order applies solely to consumers of less than car-load loats and domestic consumers, as did also the gas-coke order.

Dec. 28—Meeting of 125 insurgent delegates in District No. 1, United Mine Workers of America, call on Lewis and Green of the international organization to explain why wage concession of Oct. 30 was not dated Oct. 1 [XV, 52].

Dec. 29—Meeting held in Belleville, Ill., field at which mine workers demand Government ownership and democratic management of the mines [XV, 62].

Successful Stoking of Brazil Coal

By pulverization, it has been possible to use with success, the impure coal of Brazil, under the locomotives of the Government-owned railroads of that country. Twelve locomotives were built and equipped, in the United States, to burn pulverized coal. They were shipped to Brazil early in 1917 and put into fast passenger service. It was the intention to burn the native Brazilian coal, a means of using which in locomotive service had not then been found. On the run of 110 miles for the round trip and several hours standby, 6 metric tons of Brazilian coal were consumed.

If the same amount of United States coal had been used, it would have cost, at $40 per ton, $240. The Brazilian coal cost half as much, and so a saving was made, for the run, of $120. After a service test of six weeks had been made on one of these locomotives, the flue sheet and tubes were found to be absolutely clean though the firebox had not been opened except for the dumping of the ash and slag.

These Brazilian coals ran high in sulphur, the percentage ranging from 4.5 to 6 per cent. However, no difficulties arose from the high sulphur percentage, nor did the sulphur have a deleterious effect on the boiler. These coals have a high percentage of moisture and ash, the proportion of the latter ranging from 22 to 30 per cent. Where possible the moisture was reduced before pulverizing to 3 per cent. and less. On several trips a low grade of Brazilian lignite was successfully burned, although the moisture ran as high as 12 per cent.

COAL AND COKE NEWS

Harrisburg, Penn.

Foreigners, permanently disabled while at work in Pennsylvania, will be paid their full compensation awards in lump sums, so that they may return to their respective countries, where they may, if possible, become self-supporting, according to a decision reached on Jan. 15 by members of the State Workmen's Compensation Board and representatives of employers. During the hearing it developed that many of the permanent disabled claimants have requested their compensation in full, so that they could go to their homes in foreign lands and buy farms or engage in some other business which would insure them a livelihood. The commission and employers decided to coöperate in paying the full awards, the initial payment being sufficient to carry the claimants and family to their foreign homes. On their arrival at their destination, the American Consul or other authorized agent will pay the remainder of the claim. It was announced that in many instances American consular agents have purchased farms for the disabled workers at the request of the latter.

Industrial concerns through the Lehigh Valley are much interested in the Delaware-Lehigh Atlantic coast inland waterway system proposed by the Morrisville (New Jersey) Chamber of Commerce to the United States Railroad Administration. The recommendations include plans for a reconstructed 1000-ton barge canal from Morrisville to Mauch Chunk and to Coalport, the northern terminus of the Lehigh Canal, a mile and half from Mauch Chunk. The total distance 708 miles, and the total lift from tidewater to the end of the Lehigh Canal, piercing the very heart of the anthracite coal region, is 563.5 feet.

Seventy-nine per cent. of the slate quarried and manufactured in the entire country comes from this region. Thirty-six per cent. of all the cement manufactured is taken from this same region, and, what is most important of all, millions of tons of anthracite coal are taken annually from the northern part of this immensely wealthy region.

Uniontown, Penn.

Removal of the fixed price on coal and coke Feb. 1, will have little or no immediate effect, operators believe, upon the local region. Virtually all coke contracts for the first half contain clauses providing for the suspension of the Government price, and demand will not then be sufficient to send the price upward. A reduction in price of spot coke for a short period would not be much of a surprise here. Explanation of the temporary backward trend of the market is found in the fact that a number of blast furnaces have blown out stacks for repairs. Within 60 or 90 days they will again be running at capacity and demanding more coke. The furnaces at present are taking all the Connellsville coke produced, but the market is not brisk. The coal market here has been inactive for two weeks, coal having sold as low as $1.90. That applies particularly to the small operators, a number having been forced out of business.

A gain of 20,000 tons in the coke output was noted in the production report for the week ended Jan. 11, which placed the aggregate output at 576,538 tons coal. Coke shipments were 270,915 tons. Coal shipments dropped off 3000 tons, being 170,415 tons. The region is still running 75,000 tons behind normal production.

Charleston, W. Va.

Market conditions at the outset of the week beginning Jan. 13 in the Kanawha district were such as to cause operators to restrict work at the larger plants to about half time, due to the fact that Western consumers are withholding orders until they are a little more certain as to what the future holds, especially in view of large reserve stocks on hand. Since Kanawha district coal for the most part goes to the West, such a condition tends to reduce the demand in that district and, therefore, Kanawha operators look for no increase in orders for at least another thirty days. A slow market is reflected in the output for the week ending Jan. 11, when 116,800 tons of coal was produced in 3163 working hours. Car shortage caused a loss of only 130 hours and labor shortage 207 hours, while "no market" was responsible for the loss of 1026 hours and mine disability for 197 hours.

Impetus was given production in the New River district during the week ending Jan. 11 and in the following week by the removal of embargoes on tidewater shipments which had been in effect for almost a month, although operators were somewhat apprehensive that there might be further embargoes. Physical conditions, however, were entirely satisfactory, cars being plentiful and the man power sufficient to mine all the coal it was possible to load. It will be fully three months, however, before there will be a return to the normal demand, in the opinion of operators.

Although train crews on the Norfolk & Western Ry. have been reduced as the result of a falling off in coal shipments, there has been an increase in the output of the Pocahontas and Tug River district, which has again reached 300,996 tons as compared with 156,000 tons, reducing the tonnage loss to 85,795 tons, labor shortage constituting the biggest loss—47,702 tons. Only 2448 tons were lost from car shortage. The loss from "no market" amounted to about 20,000 tons. The demand has been rather dull for several weeks so far as the Tug River and Pocahontas fields are concerned, but this condition, it is believed, will not last long. Zone restrictions, however, have and are working a great hardship on the mines of the district, some of which have been shut down entirely.

Market conditions, insofar as the Fairmont district is concerned, are fair and the mines have not had much occasion so far to limit their output. Cars have been unusually plantiful. The supply has run from 1400 to 2400 cars a day. The greater part of the region's product is being shipped to the East, where there appears to be a little better market than there is in the West. The operations in the district have been besieged to dispose of their coal at a sacrifice, but prices, generally speaking, are being maintained.

A slight gain was made in production in the Logan mining district during the week ending Jan. 11 as compared with the previous week, 151,499 tons being produced, the tonnage loss amounting to 135,921 tons. By far the greatest loss was sustained through "no market", that loss reaching 96,975 tons. Car shortage also caused a considerable loss—22,074 tons.

Birmingham, Ala.

Coal production for the week ending Jan. 11 went to 339,080 tons in Alabama, compared with 250,147 for the week ending Jan. 4 and 109,179 tons for the week ending Dec. 28. Every indication points to an increase for the week ending Jan. 18. Zone and price regulations suspended Feb. 1 by the Government will have little effect here, it is said, as there is a market for every ton of coke or coal produced, and all dealers have orders for weeks ahead. Alabama producers say that they do not apprehend much change in business conditions as a result of the suspension order because all intend to live up to their contracts. The shortage here is not confined to the district, but yards within ten miles of some of the largest mines are unable to get coal in the quantities they demand.

Contracts between operators and miners will be maintained at the present scale until the end of the war, perhaps longer. Commissions for dealers, brokers and others will be taken up in plenty of time before present arrangements are abrogated.

Victoria, B. C.

The securing of an adequate supply of coal at reasonable rates for the City of Prince Rupert, B. C., has been under investigation by the Council of that community. Nicol Thompson, Fuel Controller, was interrogated as to charges, and in his reply stated that it had been arranged when he visited Prince Rupert in October, 1917, that the price of coal should be made by the dealers at their wharf or shed, cost of delivery to be arranged with the purchaser. At that time it was figured that the price would be $10.50 a ton, but since then there had been advances, making the cost at the mines as follows: All coal mines on Vancouver Island, except the Western Fuel Co., $7.20 per gross ton; Canadian Western Fuel Co., $6.45 per gross ton. Mr. Thompson further explained that under the new regulations, while the price at which a dealer might sell was not fixed, his profit was limited to 50c. per net ton over all reasonable overhead charges.

Mayor Gale, of Vancouver, wrote Prince Rupert that the retail price of coal delivered in sacks over the greater part of his city was $10.50 per ton of 2000 lb. He added that Vancouver had the privilege under charter amendments secured two years ago to operate its own coal business, and it has actually supplied all civic and semi-civic buildings at actual cost, although the city has not gone into the coal business in the ordinary way. The Prince Rupert Council finally recommended the establishment of closed coal bunkers operating on a gravity system, in order to eliminate much of the labor now wasted in distribution; that coal be purchased by consumers in bulk as far as possible to avoid the extra 50c. a ton cost for sacking; that a representative of the city be appointed to coöperate with the Provincial Fuel Controller for the regulation of supply and prices in the Northern District; and that Prince Rupert be given power under the Municipal Clauses Act to operate coal yards if it is found in the public interest that such a policy be adopted.

PENNSYLVANIA

Anthracite

Morea—The Morea Colliery of the Mill Creek Coal Co. has been completely electrified. John Creilin is chief electrician at the plant.

Cresson—The Pennsylvania Coal and Coke Corporation has contracted with the Roberts & Schaefer Co. for the installation of a tipple and washery at its Patton mine.

North Pittston—Three men employed at the No. 9 colliery of the Pennsylvania Coal Co. were seriously burned by an explosion of gas on Jan. 14. It is alleged that the men went into the working place contrary to the orders of the fireboss. Fortunately, the quantity of gas that had accumulated was small and no serious damage was done to the mine.

Wilkes-Barre—Charging that coal property is assessed 500 per cent. above its actual value while other classes of real estate in the city is 30 per cent. undervalued, Lehigh Valley Coal Co. attorneys have filed an appeal from the assessed valuation of its property in four wards of the city as fixed for the coming year by the board of revision of taxes and appeals.

Uniontown—Sale of 2225 acres of Greene County coal land, involving a price of $1,335,000, was reported here recently. The tract was purchased by the Cumberland Coal Co. for the United States Steel Corporation, which, with the new tract, now controls 17,000 acres of coal land in the county. The purchase included the holdings of the Cray, Moran and Hibbs tracts; the price paid was $600 an acre.

Uniontown—Development is to be commenced immediately of a 35-acre tract of coal located near Belle Vernon, which was purchased this week by W. H. Wilkey. The property comprises what is known as the Morgan and Beazell tracts, and includes 100 acres. Operation of the mine will be commenced Apr. 1. The coal is especially fitted for byproduct purposes. The consideration was $52,000.

VIRGINIA

Kiser—After a suspension of a few months at the instance of the Government, construction work on the big byproducts plant of the International Coal Products Corporation, at this place, has been resumed and the plant will be rushed to completion. When completed it is estimated that the plant will represent an expenditure

of $3,000,000. Byproducts of coal, much of them for Government use, will be manufactured at this plant.

WEST VIRGINIA

Meadowbrook—The Lambert Run Coal Co. is making rapid progress in the construction of a number of new miners' residences near its properties in this section.

Moundsville—S. Dorsey has recently completed negotiations for the purchase of a large tract of coal properties in the Washington and Clay Districts, near Moundsville, and plans are now in formation for early development work.

Perryville—Numerous improvements have been made by the New Export Coal Co. at its plant at this place, among the most important of such improvements being the construction of a new power house, in addition to 20 new miners' dwellings. The executive in charge of operations is W. F. Mandt.

Huntington—Huntington has been made the headquarters of the newly organized General Coal Co., which has a capital of $50,000 and which will undertake the development of coal lands in the Guyan region. The company was organized by J. L. Brooke, E. A. Spreen, R. S. Quinn, Thomas Quinn and W. J. Quinn.

Mount Hope—The East Gulf Coal Co., recently organized, is planning to commence development work at once on a tract of coal lands comprising approximately 4500 acres, near Mount Hope. It is understood that the company is arranging plans for the development of a townsite to comprise about 150 residences, the erection of tipples and necessary mining machinery for the initial development of two mines. P. M. Snyder is president; L. S. Tully is secretary-treasurer, and P. C. Thomas is manager.

Huntington—Seven thousand acres of coal land in Boone County have been acquired by the Youghiogheny and Ohio Coal Co., a Cleveland concern, from the Crane Real Estate Trust, the amount involved being, it is understood, close to $1,000,000. The property which changed hands represents some of the holdings of the late J. O. Cole and the late Clinton Crane. From what can be learned the company will not undertake the immediate development of the newly acquired land but will in time establish a large plant for the development of its new holdings, where there is much fine standing timber.

KENTUCKY

Chavies—A tipple is to be built in the near future by the Coneva Coal Corporation, which began the mining and shipping of coal recently from its No. 3 mine at this place. The company is now having estimates made on the probable cost of the new tipple.

Lynch—The United States Coal and Coke Co. is planning to commence work at an early date on the installation of a new tipple at its properties. It is understood that the company is planning for increased development operations to bring the daily output to about 400 cars.

Benham—The Wisconsin Steel Co. is considering plans for extensive improvements at its local coal properties, including the construction of new tipples and the installation of coke ovens, to provide for increased capacity. The company is a subsidiary of the International Harvester Co., Chicago, Ill.

Barbourville.—The Horse Creek Coal Co., of Manchester; and the Manchester Coal Co., of the same place, will be able to get out coal in the spring as a result of the completion of the Horse Creek branch line, built by private capital, and connecting with the Cumberland & Manchester R.R. Several other mines have been started and will be ready to ship shortly.

OHIO

Athens—Mine 254 at Jacksonville, belonging to the Collieries Co., and one of the oldest mines in continuous operation in the Hocking field, was put out of commission by a $20,000 fire which destroyed all the machinery. The cause of the fire has not been determined.

Bridgeport—A number of coal mines in the eastern Ohio district are closed down, and others are operating only on part time, according to William Roy, president of Ohio Mine Workers, District No. 2. Shutting off of lake shipments and the closing of the Government pools at Cleveland and other distributing centers are responsible, Mr. Roy thinks

ILLINOIS

Toluca—The Jackson-Walker Coal Co., of Kansas City, has finished rebuilding its plant at this place. It is an old property, and the company has put in entirely modern equipment. This company's mines are located at Marceline, Mo., Pittsburg, Kan., Osage City, Kan., and at this place. The output is sold principally to the Santa Fe Ry. The company is now working five mines and controls the output of fifteen more.

Springfield—Citizens' Mine A of the Citizens Coal Co. has reopened after a shutdown of two months, giving employment to more than 200 men. The company expects to operate indefinitely.

The Springfield Consolidated Railway Co. has suspended its service to the Deveraux mine. It is expected that arrangements will be made for the running of special work cars morning and evening.

Carlinville—The Standard Oil mine at Berry, near here, will soon be ready to work, and other large developments owned by the company in this vicinity are being pushed as rapidly as possible. General Manager Maubeck and Major Douglas, chief engineer of the Chicago & Alton R.R., were in consultation recently with Assistant Manager Frank R. Fisher, with a view to facilitating the work.

MISSOURI

Kansas City—A new coal mine by the Palhattan Coal Co. has been opened in Macon County, Missouri. The operation has a capacity of 600 tons a day.

New plant No. 68, in Macon County, which the Central Coke & Coal Co., of Kansas City, is erecting at a cost of $200,000, is now being developed and is producing 100 tons of coal a day. In three months, when all the machinery is installed, it will produce 2000 tons a day. It is one of the largest mines owned by this company.

Foreign News

London, England—The Southport Miners' Federation, which demanded on Wednesday, Jan. 15 that the Government demobilize all miners in the army, also decided by a majority of more than two to one to demand an advance of 30 per cent. over present wages other than war wages.

American Headquarters in Germany—The disorders in Berlin, with the resultant interruption to railway traffic, are threatening to cut off the coal supply of the allied armies of occupation. A commission of American, British and French military officials left on Jan. 10 for the coal fields to investigate conditions. The American army alone uses 25,000 tons a month.

Victoria, B. C.—The Groundhog anthracite coal fields of British Columbia are to be developed, according to responsible mining men. These are situated north of the Hazelton district and contain eleven known commercial seams, aggregating about 68 ft. in thickness. Interest in these measures is held by Sir D. D. Mann and the Lord Rhondda Estate. While active work was suspended during the war, it is asserted that it will be resumed without loss of time.

Medicine Hat, Alta.—At a meeting of the Federation of Labor of the Province of Alberta held at Medicine Hat, Alberta, on Jan. 10, several suggestions affecting the regulation of coal mining in that province were indorsed which, if put in the form of legislation and enforced, will radically alter the present conditions. One provides for the compulsory use of electric safety lamps; another, that mine inspectors shall be elected and be subject to recall; and a third that a 6-hour day shall be granted to all underground workers.

Victoria, B. C.—Considerable interest is taken by coal mine operators of British Columbia in the announcement attributed to local officials of the Canadian Collieries (D), Ltd., that plans are being prepared by the company for the opening of new mines on the island and generally extending operations. On Jan. 6 a meeting of the directors was held at Montreal, when the resignations of Sir William Mackenzie as president and Sir Donald Mann, as a director, were received, their places being taken, respectively, by H. S. Fleming, of No. 1 Broadway, New York, and F. Perry, of Montreal.

Personals

Cary Hymere has been appointed state mine inspector of Indiana under the state industrial board. He is now a deputy state mine inspector. He succeeds Michael Scollard, who resigned a number of months ago.

Lieut. H. H. Johnson is now through with his duties in the United States Army and will resume his service with the Electric Service Supplies Co., of Philadelphia, Penn. Mr. Johnson will represent the company in the Illinois coal field.

Isaac Taylor, of Uniontown, Penn., general manager of the Snowden Coke Co., near Brownsville, Penn., was painfully injured at the Company's operation on Jan. 15, by the haulage rope flying off the sheave wheel and striking him on the leg. Mr. Taylor will be laid up for a week or more.

E. S. McCullough, of Monongahela, Penn., former vice president of the United Mine Workers of America, has been appointed commissioner of the Northern West Virginia Coal Operators' Association. The association represents a tonnage of 20,000,000 tons. Mr. McCullough will make his headquarters at Fairmont, W. Va.

Obituary

James Goldsworthy, for 15 years inside superintendent of the Honey Brook division, Lehigh and Wilkes Barre Coal Co., and for three years in a similar position in the Wyoming division, died at his home in Ashley, due to an attack of pneumonia.

James H. Small, secretary-treasurer of the Central Coal and Iron Co., Central City, Ky., dropped dead of apoplexy on Jan. 13, at the McDowell Hotel. Mr. Small was 49 years of age, and a native of Russellville, Ky. For several years he was with the Adams Express Co., as manager at Owensboro, and later at St. Louis. About ten years ago he went with the coal company, and later secured large interests in mines at Render and Beaver Dam, Kentucky.

John F. Meagher, age 37, general superintendent of coal mines for the Tennessee Coal, Iron and Railroad Co. in the Birmingham District, died at his home in Pratt City after a short illness of influenza followed by pneumonia. He was born in Maryland but moved here with his family during early boyhood. For the past seven years he had been in charge of six of the eight divisions of his company, which embrace twenty mines. He had on many occasions led his crew of helmet men in mine explosions and was loved generally by the miners.

Coming Meetings

New England Dealers' Association will hold its annual meeting March 19 and 20 at Worcester, Mass. Secretary, C. R. Elder, Boston, Mass.

American Wood Preservers' Association will hold its annual meeting Jan. 28-29, 1919, at St. Louis, Mo. Secretary, F. J. Angier, Baltimore, Md.

National Foreign Trade Council will hold its sixth convention at the Congress Hotel, Chicago, Ill., April 24-26. Secretary, O. K. Davis, 1 Hanover Square, New York City.

National Rivers and Harbors Congress will hold its fourteenth convention Feb. 5-7 at Washington, D. C. Secretary, S. A. Thompson, Colorado Building, Washington, D. C.

Canadian Mining Institute will hold its annual meeting March 5-7 at the Windsor Hotel, Montreal, Canada. Secretary, H. Mortimer-Lamb, Drummond Building, Montreal, Canada.

American Institute of Mining Engineers will hold its 119th meeting Feb. 17-20, 1919, in the Engineering Societies' Building, New York City. Secretary, Bradley Stoughton, New York City.

American Institute of Electrical Engineers will hold its annual midwinter convention Feb. 19-21 at the Engineering Societies Building, New York City. Secretary, F. L. Hutchinson, New York City.

Recent Coal and Coke Patents

Coal Auger. M. Firl, Meyersdale, Penn., 1,280,696. Oct. 8, 1918. Filed May 28, 1918. Serial No. 239,107.

Hopper Car. A. Campbell, assignor to Enterprise Railway Equipment Co., Chicago, Ill., 1,281,286. Oct. 15, 1918. Filed May 14, 1917. Serial No. 168,401.

Smoke Consumer. P. C. Stoopes, assignor to W. N. Best Smoke Consuming Co., New York, N. Y., 1,281,694. Oct. 15, 1918. Filed Nov. 28, 1917. Serial No. 204,365.

System for Handling Coal. G. E. Titcomb, assignor to McMyler Interstate Co., Cleveland, Ohio, 1,282,144. Oct. 22, 1918. Filed Dec. 7, 1917. Serial No. 205,912.

Grate. J. S. Wilson, Scranton, Penn., 1,282,346. Oct. 22, 1918. Filed Nov. 7, 1917. Serial No. 200,764.

Dump Car. H. S. Hart, Chicago, Ill., 1,282,227. Oct. 22, 1918. Filed July 26, 1918. Serial No. 246,814.

Furnace. J. E. Bell, Brooklyn, N. Y., 1,283,047. Oct. 29, 1918. Filed Jan. 17, 1917. Serial No. 142,787.

Soot Blower for Water Tube Boilers. J. E. Bell, Brooklyn, N. Y., 1,283,048. Oct. 29, 1918. Filed Mar. 24, 1917. Serial No. 157,269.

Method of Briquetting. E. R. Stucliff, assignor to Pure Coal Briquettes Co., Cardiff, Wales, 1,283,354. Oct. 29, 1918. Filed Mar. 27, 1915. Serial No. 17,505.

Coal Digger. H. S. Webster, Canton, Ohio, 1,283,383. Oct. 29, 1918. Filed Jan. 12, 1918. Serial No. 211,595.

Mining Machine. C. E. Davis, assignor to Goodman Manufacturing Co., Chicago, Ill., 1,282,768. Oct. 29, 1918. Filed Oct. 6, 1910. Serial No. 585,549.

Mining Machine. H. C. Berkey, assignor to Jeffrey Manufacturing Co., Columbus, Ohio, 1,284,174. Nov. 5, 1918. Filed Sept. 16, 1913. Serial No. 790,146.

Publications Received

Third Annual Report of the Industrial Accident Board, State of Montana. For the twelve months ending June 30, 1918. Illustrated, 343 pp., 6 x 9 inches.

Arbitration and Wage-Fixing in Australia. Research Report No. 10, October, 1918. National Industrial Conference Board, Boston, Mass. Unillustrated, 52 pp., 6 x 9 inches.

Methods of Shutting Off Water in Oil and Gas Wells. By F. B. Tough. Department of the Interior, Bureau of Mines. Bulletin 163. Petroleum Technology 46. Illustrated, 122 pp., 6 x 9 inches.

Monthly Statement of Coal-Mine Fatalities in the United States, September, 1918. Compiled by Albert H. Fay. Department of the Interior, Bureau of Mines. Unillustrated, pp. 29, 6 x 9 inches.

The Environment of Camp Grant. By Rollin D. Salisbury and Harlan H. Barrows. State of Illinois Department of Registration and Education, Division of the State Geological Survey. Bulletin No. 39. Illustrated by maps, 75 pp., 6¾ x 10 inches.

Water-Gas Manufacture with Central District Bituminous Coals as Generator Fuel. By W. W. Odell, U. S. Bureau of Mines, and W. A. Dunkley, State Geological Survey Division. State of Illinois Department of the Registration and Education, Division of the State Geological Survey. Coöperative Mining Series, Bulletin 22. Illustrated, 24 pp., 6 x 9 inches.

Manufacture of Retort Coal-Gas in the Central States Using Low-Sulphur Coal from Illinois, Indiana and Western Kentucky. By W. A. Dunkley, State Geological Survey, and W. W. Odell, U. S. Bureau of Mines. State of Illinois Department of Registration and Education. Division of the State Geological Survey. Coöperative Mining Series, Bulletin 21. Illustrated, 24 pp., 6 x 9 inches.

Trade Catalogs

Copies of the catalogs, booklets and other literature listed below may be obtained free of charge by addressing the manufacturer.

Fairmont Runabout Mine Pump. Fairmont Mining Machinery Co., Fairmont, W. Va. Bulletin No. 13. Pp. 6, 6 x 9 in., illustrated. Explains the features of a portable electric mine pump.

Three-Phase Low Tension Equipment. Delta-Star Electric Co., Chicago, Ill. Bulletin No. 302. Pp. 4, 8 x 10½ in., illustrated. Deals with wiring supports, plugs and receptacles. General information is given of the application of unit type plugs and receptacles of the extra heavy type.

Steelcrete Machine Guards. Expanded Metal Engineering Co., New York, N. Y. Booklet. Pp. 40, 3½ x 6¼ in., illustrated. Describes and illustrates "Steelcrete" machine guards. The booklet will be found extremely valuable to any one who desires to install machine guards.

Sullivan Portable Mine-Car Air Compressors.—Sullivan Machinery Co., Chicago, Ill. Bulletin 75-I. Pp. 8, 6x9 in., illustrated. Describes the Sullivan class "WK-2" air compressors, mounted on a special truck. Are used chiefly in coal mines, where they are found convenient for converting electricity into air power for the operation of drills, coal pick machines in headings, post punchers, cement guns, etc.

Ladew Leather Belting. Edw. R. Ladew Co., Inc., Glen Cove, New York, N. Y. Catalog. Pp. 108, 6 x 9 in., illustrated. A beautifully printed catalog giving the history, standards, methods and policies of the company. It is in effect a treatise on the manufacture and use of leather belting. Belts for all purposes are described, as are also the many different specialties manufactured by the Ladew company. A comprehensive index is a useful feature in the catalog.

Industrial News

Buffalo, N. Y.—Reduced water pumpage in the city of Buffalo during December resulted in a saving of more than 1100 tons of coal at the pumping stations.

Wayland, Ky.—On Feb. 1 the purchasing department of the Elk Horn Coal Corporation will be transferred from this place to Wheelwright, Ky. G. S. Kinzer is purchasing agent.

Bethlehem, Penn.—The Guerber Engineering Co. has changed its title to Bethlehem Fabricators, Inc. The ownership, direction, management and policy of the company are not changed.

Virden, Ill.—The Montour Coal Co. has changed its name to the Pittsburg Coal Co. The company's mine at Virden is known at the North Mine. Arthur Neale will continue as superintendent.

Charleston, W. Va.—In line with recommendations made by Governor Cornwell, the state department of mines will ask the present session of the legislature to provide for the appointment of three additional mine inspectors and an increase of salary for inspectors of 25 per cent. The present rate is $175 per month.

Louisville, Ky.—B. F. Avery & Sons, large plow manufacturers, will be large consumers of coal in the fall, as the company has arranged to increase its plant by one third, having purchased a line of harvesting machinery from the International Harvester Co. and arranged to manufacture it at Louisville instead of Springfield, Ohio.

New York, N. Y.—William McElraevy has been appointed district manager of the Dominion Asbestos and Rubber Corporation of New York. Mr. McElraevy was formerly manager of the New York Branch power plant specialty department of the H. W. Johns-Manville Co., in which capacity he served for nine years and with a very successful record.

Pittsburgh, Penn.—The Draeger Oxygen Apparatus Co. on Jan. 7 changed its name to the "American Atmos Corporation." The charter of the company remains the same, except to the extent that it is authorized to manufacture various forms of breathing apparatus regardless of whether dependent upon oxygen or not. The officers and directors of the company remain the same.

Pittsburgh, Penn.—Members of the Pittsburgh Coal Exchange, at a meeting held on Jan. 11, elected Captain W. B. Rodgers to serve as president, this being the twenty-second consecutive year that he has held that position. Captain J. Trank Tilley was elected secretary for the twenty-eighth time. He was also made vice president, and will serve with the other men elected to that office, W. Harry Brown and A. B. Shepherd. H. O. Stang was elected assistant secretary.

Birmingham, Ala.—The Alabama Coal Operators Association has filed a petition with the Birmingham district freight traffic committee asking that a through rail and water rate from the Birmingham district to Mobile and New Orleans be published. The combination rate, it is understood, is requested in behalf of operators whose mines are contiguous to the Warrior River, and if granted will enable them to take advantage of the cheaper water transportation rates.

New York, N. Y.—The General Briquetting Co., 25 Broad St., is installing its new demonstration and custom briquetting plant at 57th St. and 12th Ave., New York City. Provisions have been made to demonstrate on a commercial scale modern methods of briquetting coal fines, coke breeze and lignite, as well as metal, ores, concentrates and flue dust. The installation includes Belgian roll coal briquetting machinery, complete with masticator for the Dutch oil process, dryers, elevator and conveyor system and power plant. It will commence operations about Feb. 1, 1919. Cost $200,000.

New York, N. Y.—With a view to putting into effect the recommendations contained in the report of the Foreign Trade Committee of the National Coal Association, that an association be formed under the Webb-Pomerene Law, to be known as the American Coal Exporters, Inc., there was a gathering of a few operators at the office of F. W. Wilshire, of the Consolidation Coal Co., of this city, on Jan. 15, at which preliminaries were discussed. Because of the small attendance, however, nothing definite was decided upon, but it is understood another meeting is to be held within a short time.

Morgantown, W. Va.—The coal producers of Morgantown received notice a few days ago that the railroads to which they had been furnishing fuel coal for some time would cancel all contracts for the present, claiming the right under the rules promulgated by the National Fuel Administration to cancel all contracts. Heretofore the railroads have been paying $2.50 a ton for coal, but have notified the dealers that they will not now consider a price above $2. This will serve completely to put the wagon mines out of business, as soon after the signing of the armistice that 75c. a ton extra allowed the wagon mines was taken off the price and the additional cut of 50c. a ton will make a difference of $1.25 a ton.

Carbondale, Ill.—George R. Sheldon, New York, financier, died at a hospital here on Jan. 14 from injuries received in the mine of the Union Fuel Co., at Dowell, 14 miles from here. He was a director of the fuel company, which is a subsidiary of the Union Electric Light and Power Co. of St. Louis, and with twelve other men was making an inspection of the mine. He became separated from the rest and was caught between a moving string of loaded coal cars and a rib of coal. He was also a director of the West Kentucky Coal Co. and was Chairman and Treasurer of the Board of Directors of the North American Co., which owns the Union Electric Light and Power Co. and the United Railways Co. of St. Louis.

Columbus, Ohio—Bids were opened Jan. 6 by the Columbus Board of Purchase for coal for the various departments as follows: 1400 tons of nut, pea and slack for the garbage and refuse departments; 2000 tons for the water-works and 3500 tons for the municipal light plant. Fletcher-Williams Coal Co., Columbus, bid $2.14 at the mines for Cambridge nut, pea and slack, with a premium of two cents for every 100 B.t.u. over 11,000. Calculating the coal to have 13,000 B.t.u., this would make the price $2.54 at the mines, which is slightly above the Government price. The West Virginia Washed Coal Co., of Covington, Ky., bid $2.40 at the mines for West Virginia nut, pea and slack, making the Columbus price $3.60. The contract may be awarded later.

Philadelphia, Penn.—The Reading Ry. is making a series of tests of various kinds of coal assigned to various engines. They comprise the freight, coal or long-trip engines, shifting and passenger engines. Tests made in Lehigh Valley engines with anthracite and bituminous mixed at the new mixing plant at Hazleton have proved satisfactory, it is said, and caused the Reading to look even more closely into the conservation question as it relates to engine fuel. The passenger engine from Pottsville to Philadelphia takes about 480 shovelfuls of coal to make the trip. The fast engines pulling the express consume less fuel and the locals more. It was figured in making the 1918-19 allotments of anthracite that the railroads would require 2,482,000 tons for all needs.

Columbus, Ohio—At the annual meeting of the Ohio organization of the United Mine Workers of America, protests were made against the U. S. Railroad Administration purchasing coal at lower than Government prices. A request was also made asking the Railroad Administration to so distribute its orders for railroad fuel as to give work to thousands of miners now employed on half time. Two hundred delegates attended the meeting, and it was stated that there were approximately 46,000 miners on the union rolls in the Buckeye State. A resolution was adopted in opposition to the creation of a state constabulary, as had been propesd, and to provide for which a bill is soon to be introduced in the Ohio General Assembly. All old officers in the Ohio organization were reëlected, with John Moore as president; Lee Hall, vice president, and G. C. Savage, secretary-treasurer.

MARKET DEPARTMENT

Weekly Review

Fuel Administration Announces That It Will Relinquish Control of Soft Coal on Feb. 1—Removal of Restrictions Should Serve to Stimulate Industry—No Shortage of Either Anthracite or Bituminous.

THE announcement made by the Fuel Administration that all restrictions on the movement and price of bituminous coal would be removed on Feb. 1 was received with commingled feelings by the coal trade. In its essence the order means that the bituminous coal industry is to be restored to its prewar status, with everything that the restoration implies. Among other things the zoning of bituminous coal will be eliminated and prices of soft coal will be governed by quality; in other words, the economic laws of supply and demand will once more prevail.

In a sense the removal of Government control of the soft coal industry should serve to act somewhat as a stimulus to production. Contracts for the coming coal year can now be entered into without fear of Federal interference, and the trade will gradually get back into its natural channels. The fear entertained in many quarters that the Railroad Administration would take advantage of the new order of things by using its collective purchasing power to force down the price of locomotive fuel has been set at rest by Walker D. Hines, Director General of Railroads, who in a recent statement denied that the railroads would attempt to make use of the power inherent in centralized control to the detriment of the coal industry.

Though it is unsafe to make any predictions, indications are many that the now almost stagnant soft coal market will see a decided movement for the better within the next two months. Consumers who have been cutting into their stock piles will again resume buying after Feb. 1; so will the railroads. The Government has released the shipping it had commandeered from private interests, and this more than anything will act as a stimulus to the expansion of our foreign trade. Inquiries are already starting to come in from other countries for our products, some of the steel interests reporting that export business is showing surprising activity. Resumption of operations in other fields means plenty of work for the mining industry.

Production of soft coal for the week ended Jan. 11 amounted to 10,287,000 net tons, making a total of 466,510,000 net tons from Apr. 1, 1918, to date. Only the high-grade soft coals are short in supply, there being ample of the other varieties to meet all demands.

There continues to be a large current demand for anthracite, and in spite of the remarkably fine weather there is reason to believe that this demand will continue throughout the winter. The Fuel Administration has not relinquished control of anthracite coal, and will continue for some little time to supervise its distribution.

During the week ended Jan. 11 there was produced 1,651,000 net tons of anthracite coal, making a total for the coal year to date of 76,870,000 net tons. The inquiries for stove and nut coal are greater than the supply, while the production of the other sizes of hard coal is sufficient to enable the accumulation of storage piles.

WEEKLY COAL PRODUCTION

Bituminous—The output of soft coal during the week ended Jan. 11 was exceedingly good, and in addition to exceeding the output of the week preceding showed an improvement over the corresponding week of 1918. Preliminary estimates place production of bituminous coal (including lignite and coal made into coke), during the week ended Jan. 11 at 10,287,000 net tons as compared with 8,428,000 net tons during the week of Jan. 4, and 10,163,000 net tons during the week of Jan. 11, 1918. The daily average during the current week is estimated at 1,715,000 net tons as against 1,896,000 net tons, the daily average for the coal year to date, and 1,757,000 net tons for the same period of last year.

Anthracite—The production of anthracite, estimated at 1,651,000 net tons, exceeds production during the week ended Jan. 4 by 262,000 net tons, or approximately 20 per cent., but fell 68,000 net tons, or approximately 4 per cent., below production of the corresponding week of 1918. The daily average during the current week is estimated at 275,000 net tons compared with 212,000 net tons for the coal year to date, and 319,000 net tons for the same period of last year. While the production of anthracite for the coal year to date is 1,600,000 net tons, or 2 per cent., below production during a similar period of 1918, it is nevertheless equivalent to demand. Figures now available for the nine months ended Dec. 31, 1918, show that the allotment originally outlined by the Anthracite Committee of the Fuel Administration on domestic sizes of anthracite (including pea), to have been practically fulfilled.

New England Shipments.—Bituminous coal to New England during the week ended Jan. 11 is estimated at 255,355 net tons, approximately 40,000 net tons, or 14 per cent., below the shipments during the week preceding. Rail receipts, as well as tidewater shipments, with the exception of the tonnage loaded at Baltimore, declined during the current week.

Tidewater Shipments.—A decrease in tidewater shipments of approximately 113,000 net tons, or 17 per cent., during the week ended Jan. 11 as compared with the week preceding, was brought about by the decline in shipments from New York and Philadelphia, which amounted to 33 per cent. Shipments from Baltimore were only slightly lower than the week preceding, while shipments from Hampton Roads exceeded those of Jan. 4 by 20,000 net tons, or 9 per cent.

Beehive Coke.—The production of beehive coke in the United States during the week ended Jan. 11 is estimated at 538,000 net tons, an increase over the week of Jan. 4 and but little less than the production in the corresponding week of 1918, when the output was 555,000 net tons. The operators in the Connellsville, Greensburg and Latrobe districts of Pennsylvania during the week ended Jan. 11 produced 309,416 net tons of coke, operating their plants at 72.6 per cent. of their full time as against 70.4 per cent. during the week ended Jan. 4. The same operators produced 146,000 net tons of coal.

Byproduct Coke.—Byproduct coke production during the week ended Jan. 11 is estimated at 541,600 net tons and falls but slightly below the production of the week preceding. It is, however, approximately 50 per cent. in excess of production during the corresponding week of 1918. The plants of the country were operated during the week at 83.1 per cent. of their full time as compared with 82.2 per cent. during the week of Jan. 4. The slight increase in loss of time during the current week compared with the week preceding was brought about by a shortage of byproduct coal in Pennsylvania, and repairs to plants in Maryland. Massachusetts, Ohio, Minnesota and Pennsylvania are the only states reporting losses of time due to lack of demand.

BUSINESS OPINIONS

Marshall Field & Co.—Current wholesale distribution of dry goods is running lower than for the corresponding week of 1918. Road sales for immediate delivery were much larger, while those for future delivery were less than for the same week a year ago. Customers were in the house in increasing numbers. Collections are good.

Dry Goods Economist—Noteworthy progress was made this week in the movement toward more stable price levels. A steep cut was made on two standard brands of bleached muslins. Downward revisions were also made on other well known brands of bleached cottons. In floor coverings, following the recent recession in linoleum prices, reductions were made by one leading manufacturer of Wilton rugs.

Bradstreet's—In manufacturing the pace is unquestionably slower, especially so at iron and steel and textile centers, where the problem of unemployment, mostly of unskilled labor, is receiving more attention. The distictively new feature of the week is the apparent livening up of interest in what might be called raw materials, this more especially at large eastern centers, where dyestuffs, drugs, sole leather, raw wool at government sales, and hardwoods show more inquiry. On the Pacific coast, however, lumber is more active, fir prices having advanced. At some large western and southern centers inquiry for building materials, based on expected large spring operations, is more in evidence.

The Iron Age—With operations not quite so good as a week ago, it is to be expected that reports are numerous of plant shutdowns. A surplus of labor has already become apparent at steel works, with offers to work at lower than existing wage schedules. Concentration on export probabilities still serves to accentuate the unfavorable differences in ocean freight charges as between this country and England. American billets have been quoted at $50 per ton, f.a.s., while the British established export price is £13 10s. Thus the vessel freight rate difference needs to be within $14 per ton for the United States to participate. American steel bars have been offered at about $72.50 alongside ship, or about $20 per ton lower than the British product.

Atlantic Seaboard

BOSTON

Softening prices, but no better demand. Railroad contracts not renewed. Steamers still being tied up. Shipping Board announces that bottoms will be returned, but no assurance as to rates. Hampton Roads dumpings light. Only scattering lots placed inland from Tidewater. Rail movement continues to sag. Buyers becoming interested in differential between rail and water routes. New York piers embargoed. Long Island Sound market dead. Anthracite easier, but loading conditions unfavorable. Broken, egg and pea come forward, but range sizes hard to get. Allotments practically off. Dealers guarded about buying. "Independents" find it difficult to place the unrestricted sizes. Retail prices in Boston.

Bituminous—It is well established now that fair-grade Pennsylvania coals are being offered at considerably less than the Government price, although nothing more than scattering sales have been made. In fact, it is still taxing the ingenuity of several factors in the market here to place coal that has arrived at destination and is not accepted by the original consignee. Telegrams are frequent from operators who are pushed to find orders and all manner of quotations are heard. What was offered at $2.80 a week ago is now quoted at $2.60, and on some of the less favorably known coals $2.40 has been heard. Doubtless some of these offers are more or less irresponsible, so many selling agents are trying hard to induce buyers to take on temporary supplies, but it is very evident that sacrifices would very gladly be made by many operators to get orders for current shipment. A possibility of labor tie-ups and light output are used as arguments, but the trade is as unresponsive as at any time in its history. Most of the low-priced propositions are being made to the railroads, but this is because operators do not realize it is perhaps the most unfavorable prospect of all. One of the smaller roads, using about 250,000 tons, has now on hand nearly six months' supply, and all the New England lines have now so large an investment in fuel and general traffic is so light that it will be several months before there is any pronounced railroad buying. Most of the textile plants have goods on hand they cannot sell, and the whole prospect for coal in this territory is anything but encouraging.

As fast as certain of the long-term fuel contracts expire the railroads are allowing them to lapse, without any renewal. This is contrary to the expectation of the shippers and seems to be particularly applicable to coal coming forward by water. In view of all the conditions this policy is easily understood. No responsible buyer would today tie up for a term ahead on present marine freights as established during the height of war and in the midst of great shortage of shipping.

At Hampton Roads there continues a great surplus of coal over bottoms to load. Government requisitions are materially reduced, especially for the Navy, and embargoes are frequent against producers whose coal is not readily dumped at the piers. There is an entire absence of spot inquiry for cargo coal.

At this end, from Tidewater inland, there is only a light scattering inquiry. F.o.b. Providence and Boston present prices on Pocahontas and New River are from $8.10 @ 9, but the differential is so high that it is exceptional when more than a few cars can be placed.

Several of the pools at the New York loading piers continue to be under embargo, current dumping is so greatly diminished. Bunker and export demand has fallen off, and along the Sound the market is hopelessly dull. It is only with difficulty that contract deliveries are accepted, and in many cases plants that were unable to get shipments regularly last year through usual channels were so often forced into the open market that it is impossible for them now to take unfilled balances.

A great deal is being heard about fuel oil in this market. Some very attractive propositions are being made to large industries, and in the light of certain remarkable cases most factory managers will feel like making tests. This will make it all the more important from a coal standpoint to put marine freights on a reasonable basis.

Anthracite—The prolonged mild weather and the entire absence of any apprehension over supply the remainder of the winter leads the public to think the situation on domestic sizes in very comfortable shape. It is, however, a weather market, and given a spell of sustained cold there would develop a briskness that does not now appear. All-rail the movement continues very consistent, the average daily receipts at the gateways for the first half of January having very nearly maintained the December level. The present movement is about 330 cars.

Loading conditions at New York are still unfavorable. It is understood that strenuous efforts are being made with the Railroad Administration to induce high officials therein to permit Reading barges to resume loading at Port Richmond. The continuance of the unfortunate experiment at Port Reading cannot be too severely criticized, and it is much to be hoped that an efficient handling of the Reading fleet can once more be permitted. In spite of allotments and restrictions there might still be some serious situations in New England should we get some really cold weather, and further tampering with long-accustomed channels of supply should be given up the earliest day possible.

Broken, egg and pea are still in such surplus at practically all the piers that orders calling for these sizes are getting preference, and that means that a large number of smaller dealers who must insist upon a proportion of stove and chestnut are obliged to wait. The range sizes are still extremely hard to get.

Although anthracite allotments are not yet abolished, except with regard to broken, egg and pea, there are increasing indications that the shippers are no longer bound by them. The unrestricted sizes are being so freely offered, particularly by "independent" shippers, that retailers are buying very cautiously. Present prices do not encourage the dealer to accumulate much reserve of these sizes. It is now a regular practice of some of the retailers to use stone and coke crushers to reduce the size of their broken and egg.

The "independents" are finding it harder and harder to place their surplus sizes. During the tight period it was usual for them to exact the limit of price for coal and freight, and there are many retail distributors who are relieved to find themselves no longer dependent upon these sources.

NEW YORK

Anthracite market easy, with demand slow. Plenty of domestic sizes, and coal coming forward in good volume. Strike of boatmen not felt by dealers. Dumpings at local docks show decrease. "Independent" coals maintain prices. Bituminous traders expect little change due to removal of restrictions. Local situation inactive. Plenty of coal, but demand is slow.

Anthracite—The situation continues easy, with demand slow and plenty of coal coming forward to meet all requirements. Salesmen returning from their trips inland report better business and say that many dealers are keeping their bins well filled, notwithstanding, the belief that there might be a slump in prices for "Independent" coals.

The removal of all restrictions on the shipment of all sizes other than stove and chestnut, to any markets that can be found for them, has had no apparent result on local conditions so far, and it is possible that nothing short of a severe cold spell of several days' duration will create any sort of a demand.

None of the domestic sizes can be called scarce. Most dealers have a good supply of all coals, stove and chestnut being the shortest. Among the all-rail trade, most dealers ask for both sizes.

The strike of the boatmen had no effect upon local conditions. Dealers had their bins well stocked and were able to take care of the trade for several days, even though the weather had been much colder. There was decrease in the number of cars dumped at the local docks during the seven-day period ended July 17, 4564 cars being reported as compared with 5627 cars the previous week.

So far shippers of "Independent" coals have been able to maintain prices, but there is no telling how long this can continue unless this section of the country experiences some seasonable temperatures. Retail dealers are looking for concessions on this class of coal, and for that reason are not buying as heavily as they would if other conditions prevailed.

There is a heavy surplus of the smaller coals. Buckwheat No. 1 is a burden to some, and concessions are reported as being made. Rice and barley are not being inquired after. Quotations ranging from $3.25 to $3.40 at the mines for buckwheat have been noted, while it is also reported that some of this size has been offered as low as $6 alongside.

Current quotations, per gross ton, f.o.b. Tidewater, at the lower ports are as follows:

	Circular	Individual
Broken	$7.80	$8.55
Egg	7.70	8.45
Stove	7.95	8.70
Chestnut	8.05	8.80
Pea	6.55	7.30
Buck	5.10@6.05	5.90@6.25
Rice	4.65	5.10
Barley	4.15	4.30
Boiler	4.60	

Quotations for domestic coals at the upper ports are generally 5c. higher on account of the difference in freight rates. Prices for buckwheat, rice, barley and boiler are not fixed by the Government.

Bituminous—The removal of the Government restrictions on the bituminous industry ordered for Feb. 1 is not likely to have much immediate effect upon local conditions. It is not probable that there will be much change from existing quotations for some time to come, both operator and shipper realizing that if the cost of production is to be met, returns from sales must be sufficient to meet this expense. When a change does occur it is expected prices will decrease due to the large stocks of bituminous on hand, the hesitancy of buyers and the diminished consumption which is to be looked for with the approach of spring and summer months.

The announcement from Washington had been expected for a couple of weeks and it will go a long way toward creating a feeling of certainty in the trade. Producers felt that it would be unwise to make any moves as to future operations until some definite announcement came from the Fuel Administration, and for that reason nothing has been done regarding contracts for the coal year beginning Apr. 1. Producers and distributors will now feel able to go ahead and discuss this matter.

The situation locally is inactive. There is plenty of the fair and poorer grades on hand, while the high coals are in good demand. Instead of the buyer going after the seller, conditions are just the reverse.

Buyers are willing to wait developments unless they can secure the best the market affords. There is a decided feeling that prices will drop shortly, and that even the better grades will be obtainable at figures below the present Government maximum.

The effects of the strike of harbor boatmen were noticeable in the number of cars of bituminous dumped at the local docks for the week ended Jan. 17. Reports show 4110 cars dumped as compared with 4996 cars the previous week, a decrease of 886 cars.

Quotations as to the various grades of coal varies. Coal in Pool II was quoted as low as $2.60 at the mines, and other good grades were quoted as low as $2.35 per ton. The better grades, however, were held steady at the Government maximum prices.

Receipts at the docks have been heavy, there having been 5408 cars on hand one day this week.

Current quotations, based on Government prices at the mines, net ton f.o.b. tide-water, at the lower ports, are as follows:

	Mine, Gross	F.o.b. N. Y., Gross
Central Pennsylvania:		
Mine-Run, prepared or slack	$3.30	$5.45
Upper Potomac, Cumberland, and Piedmont Fields:		
Run-of-Mine	3.08	5.23
Prepared	3.36	5.51
Slack	2.80	4.95

Quotations at the upper ports are 5c. higher.

PHILADELPHIA

Anthracite trade quiet. Moderate weather halts consumption. Cancellations of egg and pea orders grow. Decline in use of pea blamed on poor preparation. Only activity is in stove and nut, and some softening indicated there. Individual shipments of these sizes good. Lifting of restrictions on all sizes but stove and nut helps producers. Steam trade very dull. Little activity in buckwheat. Bituminous market does not improve. Ordinary coals off price.

Anthracite—Again weather conditions have moderated, and while the former colder conditions were not extreme they did serve to buoy up the trade for the time. As it now stands, if the weather does not soon grow cold and stay cold for several successive weeks, almost anything is likely to happen to the coal trade.

In the suburban sections of the city the dealers are fairly busy and the demand for all sizes continues quite good. This

may be accounted for by the fact that one shipping company that has heavy obligations is still behind in its consignments to these localities. A great improvement is reported by them during the past week, however, and a continuance of substantial shipments may soon alter conditions there.

In the city proper the dealers admit being alarmed at the outlook. They are booking little or no new business, and numerous customers are refusing to accept more coal on orders placed last spring. Where dealers have filled the cellars they are fearful the coal will not be consumed in time to permit them to book orders for the usual spring tonnage.

The shippers continue to receive requests to suspend shipments of the sizes in plentiful supply, until by now there is a comparatively light market for egg, and the suburban dealers are having by far the greater proportion of this size consigned to them.

The falling off in demand for pea by domestic consumers is accounted for by several dealers who say that it is not only because of the small difference in price between it and chestnut coal, but to the size of pea coal coming to market. Unquestionably there has been much inferior pea coal shipped, and there are some who strongly suspect this size is being affected by the collapse of the buckwheat coal market.

This week the Philadelphia Fuel Administrator announced through the daily papers that the regulations of the administration are still effective and will continue so until further notice. At the same time he took occasion to announce that no fairer or more general distribution of coal has ever been made in Philadelphia. He states that every one now has coal and will get more as he needs it, also that the public has been protected against exorbitant prices. He went into a full analysis of the price question, as in these times of a full supply many consumers are inclined to quibble as to price. He showed that all the price increases were legitimate and only as ordered by the Government authorities and the far greater proportion of all increases was in the form of wages to the miners.

With the removal of all restrictions, with the exception of stove and nut, in the thirty counties in the state which had been barred from receiving anthracite since last April, the market on the other sizes is expected to improve.

The steam coal business is in poor shape indeed. No shipper is able to dispose of all the buckwheat produced, and since this size is the one in greatest demand it can easily be seen that the other sizes are particularly heavy. Many complaints are also heard of the preparation of the buckwheat, the principal one being that this size contains a much greater percentage of rice coal than usual. The smaller producers are compelled to dump much of the finer sizes on the banks at their operations, while the big companies are rapidly increasing the piles in the storage yards. This also includes a good tonnage of buckwheat, a size which heretofore this season did not find its way to the yards. There is also a heavy accumulation of the small steam sizes at all the tide shipping points. Even with prices cut almost to the bone shippers are unable to move cargoes of the sizes smaller than buckwheat. On the part of the consumers there seems to be a general disposition to wait, especially since they have large quantities of all the steam sizes in stock.

The prices per gross ton f. o. b. cars at mines for line shipment and f. o. b. Port Richmond for tide are as follows:

	Line	Tide
Broken	$5.95	$7.30
Egg	5.85	7.20
Stove	6.10	7.45
Nut	6.20	7.55
Pea	4.80	6.05
Buckwheat	3.40	4.45
Rice	2.90	3.80
Boiler	2.70	3.70
Barley	2.40	3.30
Culm	1.25	2.15

The foregoing prices cover company coal. Individual shipments on sizes broken to pea inclusive are 75c. higher. Steam sizes are sold at market prices.

Bituminous—The market fails to improve and there is more coal offered than is being taken. On account of this many operations have been compelled to go on short working time. There has even been some weakening in the demand for the high-grade coals. With the ending of confiscation of engine fuel by the railroads a heavier quantity of this coal came on the market. The situation as it now stands is that only the best coals with whose name the consumer is familiar can find a ready market at the full price. The inferior grades are still selling off price, the lowest quotation we heard being $2.35 a ton. At the piers embargoes have been placed against pools carrying low grade coals of certain kinds, although Nos. 9, 10, 11 and 71 are still taking good tonnages of the better coals.

In the trade at large throughout this district it is extremely difficult to get big users to take in any but the most meager tonnages, and some of them have even held up orders for the good coals pending their reducing present stocks.

There is some inquiry for the strictly blacksmith coals which were well-known to the trade prior to the war, as the users of these coals are now anxious to get back to the proven kinds of this coal. Of course, the business in this coal is small at any time.

BALTIMORE

Coal of all kinds in oversupply. Bituminous market glutted, prices break further and many mines curtail or close. Weather continues mild.

Bituminous—The soft coal market here has broken badly. On oversupply is running from bad to excellent fuel. Even the better grades are not so readily absorbed as desired. The less coals are a true drug on the market. Embargoes are continued from time to time against the Canton and Curtis Bay piers, and also against certain line points where congestion exists. The plan of combining one poor pool with a better pool of coal at Canton to get a clean-up at that point has so far not been a pronounced success. Coal is offering freely at figures much below the Government maximum. This includes some export coal that was originally shipped to Curtis Bay to be sent out at the export figure only. Meanwhile the producing end of the business is apparently determined that no general move to keep selling coal at figures that are not profitable shall again hold the trade. Many mines are curtailing production as fast as they find that there is not a ready outlet for their production rather than keep up the old policy of running anyhow and selling at an actual loss.

Anthracite—It is officially announced by the Maryland Fuel Administration that there is now plenty of coal here for domestic use, and in fact that there is an overupply of anthracite for the time being. This fact has been growing patent to a considerable portion of the trade for some time. The continued mild weather here for the season is holding down consumption, and there is a promise that the end of the winter term will see no big rush for fuel. The local administration also announced that all restrictions on supplies of anthracite are off with the exception that permission is still required to get hard coal in car-load or barge-load lots.

Lake Markets

PITTSBURGH

Full prices maintained for standard grades. Production considerably curtailed. Elimination of zoning system will make little change.

Complete removal of coal-zoning and price regulations on bituminous coal will take effect on Feb. 1, as announced late last week by the Fuel Administration. The lifting of the zone restrictions will not greatly influence the movement of Pittsburgh district coal, as some of the limitations had previously been removed, and the trade has not been materially restricted by such zoning regulations as have lately been in force. The elimination of price control will afford two months of a free market in which buyers and sellers can get together on contracts for the new coal year. Much satisfaction is expressed in local circles over the attitude the Fuel Adminostration recently assumed with respect to the efforts of the railroads to secure special prices on coal. Producers feel that the railroads should pay the same prices as other coal consumers.

Government prices have been well maintained on Pittsburgh district coal of the better grades, and predictions are to the effect that little cut in prices will be noted after Feb. 1. Producers of standard grades have simply refused to reduce prices when under pressure and prefer to curtail production to the extent necessary. As a result, the whole Pan Handle district is operating at only 30 per cent. of capacity, and producers in that district will be content to proceed at such a rate or even a lower one until lake shipments come, only about three months hence, to swell the demand.

High-grade gas coal continues very scarce and readily brings full prices, even occasionally a brokerage in addition to the Government limit. Byproduct coal is in almost equal demand. Dealers have been quoted slight reductions, hardly enough to pay them for handling the business, and prices to consumers are the full Government limit. The great majority of the wagon mines are now closed, as well as some rail mines producing altogether indifferent grades. For standard grades of coal the market is fairly quotable firm at Government limits: Slack, $2.10; mine-run, $2.35; screened, $2.60, per net ton at mine, Pittsburgh district.

BUFFALO

No active bituminous trade in sight. Anthracite demand falling off fast. Supply everywhere good. State of consumption hard to determine.

Bituminous—Members of the trade generally agree that the supply exceeds the demand quite as much now as it has done lately, and they see no reason why the surplus will not continue for an indefinite time. A few operators are holding that the present Government prices will keep up till April and then stiffen a little on the strength of the liberal contracting that is expected. It is not easy to see, though, where this view of the market is obtained, for already jobbers are showing invoices of coal at reduced prices.

The jobbers are not really so despondent as they were when the operator had no surplus to turn over to them, for they have at least some customers on their lists and they can get as much coal as they want. That gives them two chances to the one during the scarcity period. Many jobbers shipped more coal into Canada than could be sold readily, and a few lost money by having to pay heavy demurrage; but that is stopped now, though the surplus there is still large.

Anthracite—The state of the anthracite trade is shown by the report that the independent prices are weakening and that some offers are made at prices less than those made by the large companies. Steam sizes of anthracite are not any more salable than is bituminous. Jobbers report offers of buckwheat in large lots, but they refuse it. Another way of getting rid of it is to oblige jobbers to take a certain proportion of the small sizes with every order filled for pea or larger. Even this method does not appear to help matters.

Buffalo distributors say that they now have more coal than the city retailers can handle, and if the weather does not become more severe soon the market will be flat. Canada is taking more than Buffalo in proportion, but that movement is likely to weaken if the present conditions last.

CLEVELAND

Inquiry for and buying of Lake bituminous is furnishing practically the only activity now in this market. The buying of steam coal that was done the past two weeks has flickered out. Shading of Government maximums seems fast on the way to becoming the rule rather than the exception.

Bituminous—Steam coal consumers who have been feeling out the market have left it after doing some scattering buying for spot needs and have made the local market all the duller by comparison. Operators seeking to search out business have found stock piles still a great deal larger than they expected, and the demand for steam coal now seems at the lowest ebb since the armistice was signed.

The upshot is that more and more operators have been compelled to make price concessions. Especially is this true just at present of the thin-vein operators, for whom the Government maximums were 30, 40 and in some cases 50 cents higher than they would have commanded ordinarily in competition with the more standard grades. They are now letting back the spread that ordinarily existed. It is said that it would be dangerous for any steam coal consumer to offer 25 to 35 cents under the Government price for standard No. 8 coal to any operator for a sizable tonnage.

The bright spot in the market is the inquiry for 1919 lake coal. So far prices have not been discussed, though it seems pretty generally understood not much, if anything, will be clipped off of 1918 prices unless the market in the emnatime breaks badly or the wage scales or railroad rates are reduced appreciably. In several cases blocks of about 500,000 tons have been taken. In every instance, however, this inquiry and buying has been for strictly standard No. 8 coal. Buyers can now be much more particular and no such "cats and dogs" as the war forced upon them last summer will again pass muster.

The cold spell to which retail dealers looked for increased business proved short-lived, and domestic demand has fallen back into the rut it slipped into last November. Most of the larger retail dealers look for only a limited amount of buying until next fall. Domestic consumers can now buy standard grades at 25 to 40 cents less than in November. This price cutting has been especially vigorous among the smaller dealers, who seized upon offers of thin vein and stripping coal as a reinforcement for their fast waning trade.

Anthracite—The supply, though still light in comparison with regular times, continues to increase faster than demand, and there is active competition for the retail trade. This has not assumed great proportions, however, because of adverse weather conditions.

DETROIT

Inactivity continues a conspicuous feature of the Detroit market, due to large stocks, mild weather and reduced industrial activity.

Bituminous—Neither the steam plants nor the retail dealers are making as rapid progress in reducing their cumbersome stocks as had been hoped by the Detroit jobbers. The easing off in manufacturing activity following termination of war contracts has not yet given place to a normal volume of operation by manufacturing plants on a peace basis. There is consequently a material lessening of steam coal consumption.

This defers the time when jobbers and wholesalers may look for improvement in sales to the industrial plants. A large proportion of the latter are still heavily stocked with coal, much of which is of a poor quality and the use of which is proving a costly experience to its owners. Possibly this may be offset by the feeling that in having accepted the low grade coal sent to Detroit as a substitute for their usual fuel they were rendering patriotic service in yielding the better quality of coal to aid the Government in its prosecution of the war.

Anthracite—Shipments of anthracite show little increase in volume. Mild weather has encouraged conservation of the supplies on hand, as also has the opportunity afforded household consumers to stock up with coke. The requirements of baseburner owners are not yet completely filled.

COLUMBUS

Signs of strength in domestic circles are now apparent in Ohio. The steam trade is still quiet and little is expected until surplus stocks are worked up. Prices are generally firm, although some cutting is reported.

The most interesting development in the coal trade in Ohio is the increased demand shown for domestic sizes. This market has been slow on account of large retail stocks and continued warm weather. The weather has not changed materially, but nevertheless there is a better demand from many sections. Dealers are anxious to buy the fancy grades such as Pocahontas and West Virginia splints. Ohio-mined grades are also selling fairly well and, generally speaking, the domestic trade shows a better tone. Conditions are not yet normal and will not reach that point for some time because of heavy stocks which were stored by householders earlier in the season. Retail stocks, excepting in rural sections, are also pretty large. Retail prices are generally well maintained, although there is some cutting reported.

The steam business is generally slow. Little demand has developed from the industrial centers where reserve stocks are unusually large. This is true of the rubber plants of Akron and the iron and steel plants of northern and eastern Ohio. Thousands of tons of coal have been stocked by these concerns, and consequently they will not be in the market for some time to come. The policy is to use up surplus stocks before buying to any extent. The railroad demand is not nearly so large as formerly, as the freight movement is cut. One of the largest lines in central Ohio, which customarily uses 10,000 tons weekly, now consumes about 3500 tons per week. This indicates the reduction in the railroad fuel demand. Some cheap coal is now being purchased by railroads, but the larger producers have not cut prices to please the U. S. Railroad Administration. The plan to stop the Railroad Administration from buying fuel under the market is progressing satisfactorily.

Production has not been large in any of the producing fields of the state. This is due largely to lack of orders, and operators prefer to suspend operations entirely rather than cut prices.

CINCINNATI

Mild weather and limited industrial demand continue to make accumulated stock the chief factor in the market. Spot demand is very small.

The local market during the past week continued under the same restraining influences which have existed during nearly the entire current season. The brief period of cold weather, virtually the first of the season, around Christmas and the first of the year, has given way again to mild weather, with moderate temperatures, with the result that even consumers without supplies of coal in storage have not been brought to worry about heat. At the same time the slow recovery of industry from the necessity of readjustment from war to peace conditions continues at a rate which does not promise much stimulus to the coal business for the time being, however flattering the prospects may be for the latter part of the year.

The amount of coal in storage does not seem to have been overestimated by the trade, as dealers and wholesalers have reason to recall the extreme activity to which they were put last summer by the incessant and insistent demand from all quarters; and they have come to the natural conclusion that they must resign themselves to a situation resulting from having handled their usual winter business several months in advance, an account of the recollection then fresh in the minds of the public of the extreme severity of the preceding winter and the difficulty then experienced in getting coal. A consoling feature of the situation is that the habit of storing coal in advance of the consuming season may have become so impressed as to help the trade along hereafter.

LOUISVILLE

Light demand only for domestic coal, while screenings and steam grade are generally quiet. Many mines down, but prices being maintained.

The demand for domestic coal is so light that retailers can generally make deliveries immediately. Retailers' stocks are somewhat lighter than they were, but they are still buying lightly.

With the demand running largely to domestic, and trouble experienced in disposing of the screenings, many operators are of the opinion that domestic will jump in value the moment the Fuel Administration prices are lifted. It is claimed that it is practically impossible to dispose of screenings at this time in quantities sufficient to take care of the domestic production, as many mines screen two cars of screenings to one of domestic, and the latter is the grade that is in demand.

BIRMINGHAM

Demand good for steam coal, while domestic coal is being eagerly sought and not much found. Labor conditions improve slightly. Output around 60 to 75 per cent. normal.

There is a good general demand for steam coal in this market, the activity being due in a measure to the shortage in supply, which has been in evidence for several weeks.

The Fuel Administration is gradually restoring distribution to the peace-time agencies, the Southern Ry. and other priority consumers now handling their requirements direct with the mines holding contracts, and purchases by the several departments of the Federal Government will now be made through the channels formerly employed.

Domestic coal is extremely scarce and receipts are much lighter than the needs, both locally and throughout the state. There is a brisk demand for domestic fuel, and the yards of the city are nearly all bare of stocks.

Labor is exceedingly indifferent and slow about returning to work, and the output of coal is still from 25 to 35 per cent. below normal. Production for the week ending Jan. 4 was 250,147 net tons, a gain of about 140,000 tons over Christmas week.

Coke

CONNELLSVILLE

Slight signs of weakness. Production increasing with prospects of decreased consumption. Byproduct coke in market.

A few days before the Fuel Administration announced that coke price limits would become inoperative Feb. 1, the first definite weakness in Connellsville coke developed, some off grades of furnace coke selling at $5.50. There was no trace of standard coke selling at below Government limits, but this may possibly occur before Feb. 1, and there may be a decided break.

The situation is a simple, almost an elementary one. Production of coke is increasing, while consumption is decreasing. There has been little blowing out of blast furnaces thus far, but this process is inevitable. The most prominent Shenango Valley merchant producer has just blown out one stack, shipments of coke for this furnace from the Connellsville region having been discontinued last week.

At a generally attended gathering of merchant pig iron producers from all over the country, held in Pittsburgh last week, the sentiment expressed was unanimous, that furnaces should not pile a ton of pig iron, by reason of present high costs, but should blow out whenever they cannot slip their current make. The furnaces want to reduce costs and they also want to have it that when the general trade revival comes there will be no stocks to act as a drag on the pig iron market. The general opinion expressed at the meeting was that eventually pig iron prices will be materially lower than present quotations, although no decline in the very near future was predicted.

The byproduct producers are beginning to offer coke in the open market, and will be able to follow the coke market downward for quite a distance, on account of the value of their byproducts. The prospect for the Connellsville region, when the market does decline, is that of accepting lower and lower prices for coke down to the point where it would pay as well to ship the coal for byproduct coking as to turn it into coke in beehive ovens. The market for byproduct coal is likely to be well sustained and afford a profitable operation. The coke market is quotable fairly steady at Government limits: Furnace, $6; foundry, 72-hour selected, $7, per net ton at ovens. Screenings from old dumps are very hard to sell at $5.25, the Government limit being $5.50.

The "Courier" reports coke production in the Connellsville and Lower Connellsville region in the week ended Jan. 11 at 271,366 tons, an increase of 17,386 tons, and raw coal shipments at 170,915 tons, a decrease of 2653 tons.

Buffalo—The trade follows bituminous coal pretty closely. The furnaces are well supplied again and are taking only foundry and furnace at Government prices. Off grades are hard to sell, and fuel coke is as dull as coal. Just as soon as anthracite becomes plentiful it is hard to find a market for either gas or byproduct coke, as it does not meet the needs of the domestic consumer as well. The prospect of the usual good movement of ore and pig iron in the spring is flattering, though so far as reported no sales of ore have been made for next season.

Middle Western

GENERAL REVIEW

Mild weather still has bad effect on coal market. Brief activity in high-grade domestic coals. Little demand for steam coals. Production decreasing.

The year started out with good coal weather; in other words, the mercury was hovering about zero most of the time. However, within the last few days we have been having nice spring weather, and as a result the demand for domestic coals has fallen off, along with the demand for steam sizes. It is hoped that the weather man will be a little more reasonable in the immediate future, as the coal industry has been handicapped all through this winter season by the warm sunny days.

About a week ago there was a noticeable quickening in the market for all high-grade domestic coals. It was encouraging to note the inroads made on storage piles in the yards of various dealers scattered about the territory. The number of orders placed even went so far as to stabilize the market on high-grade domestic coals to some extent. This situation was short-lived, however, as the present warm spell we are having has put back the retailer into the state of lethargy he has been accustomed to all fall. The trade believes, however, that if we had from three to six weeks of normal cold winter weather conditions would be much better, and they are all hoping that this kind of weather is in store for them.

The steam market is practically dead, as there is little demand. Every now and then some dealer tries out a car of new coal, but this desultory purchasing doesn't have any effect whatsoever on the market. Railroads are still purchasing, but it is believed that they will soon have enough to enable them to issue some orders on the requisitions they have placed with Mid-West operators.

The mines specializing on steam coal are not looking forward to any great activity in the steam market until at least the first of April. The latest reports from the Geological Survey at Washington show a sharp decrease in tonnage produced. In fact, the tonnage production is dropping like a plummet. It was stated that during the week ending Dec. 28, less coal was produced in the United States than for any like period during the last three years. It is our opinion that this decrease in tonnage will continue, as it is the only logical cure for an overproduction. Operators are becoming philosophical on this point, and are prepared to operate their mines less than half time from now on, as they see that this is the only cure for the situation.

CHICAGO

Little demand for either steam or domestic coals. Trade is concerned about future Fuel Administration activities.

Market conditions in Chicago are no different from general conditions existing throughout the Middle West today; in other words, what little demand there was a week ago for domestic coal has died off, and there is little call for steam sizes. The all-important question in the mind of the trade here today is, what the future activities of the United States Fuel Administration will be. Some say that the Administration will practically go out of existence, so far as zones, prices, etc., are concerned, on or about Feb. 1. There is some talk that the Fuel Administration will continue in office until we are well on into next summer. The State Administration maintains a discreet silence on all questions, but it is believed that they are looking forward to the abolishment of all zone restrictions under date of Feb. 1.

MILWAUKEE

Mild weather makes mid-winter coal market dull and unsatisfactory to dealers. All restrictions as to anthracite delivery removed by the fuel administration. Ample stocks on hand.

Mid-January finds the coal market at Milwaukee in a limp and pessimistic condition. Continued mild weather has operated to keep down the demand to such an extent that the inroad upon stock piles of soft coal is scarcely noticeable. It is now thought the supply of hard coal, which was short of the usual quota at the beginning of the season, will be sufficient to last till the opening of navigation in the spring.

The movement of bituminous coal to the interior is slow for the season. There has been little demand, and in some cases advance orders based upon needs in former winters have been rescinded. Should present conditions continue, there is bound to be considerable bituminous coal left on the docks when spring is reached.

Hard coal prices remain at the prices last fixed, which range from $11.05 for pea to $12.52 for chestnut, with an extra charge of 50c. for carrying in. Dealers report a disinclination on the part of consumers to pay the prices asked for hard coal, and soft coal is ordered instead.

After several weeks of parley, the county fuel administration has established the price of byproduct coke at $11.50 per ton. When this price was fixed upon in December last, the producers of byproduct coke objected strenuously. The matter was appealed to Washington, which office fixed the price at $10.40, but subsequently rescinded its action and accepted $10.50 as the price. Egg, range and chestnut sizes, which had been selling at $12.25 per ton carried in, are now offered at $11.50.

Fires in soft coal piles are still smoldering in some yards, entailing labor and expense in shifting the burning product.

ST. LOUIS

Mild weather causes local market decline. No steam demand and little domestic with an abundance of all kinds of Illinois coals. Mines idle and much unrest among the miners. Transportation and car supply good.

In the Standard fields mines have been idle for an entire week on account of the inability to move steam sizes. The domestic situation is not much better. There is a light demand in the sections that live from hand to mouth, but a big supply of coal stored last summer will more than last the consumer throughout the winter unless we have from four to six weeks of the severest kind of winter weather.

In many of the smaller places outside of St. Louis similar conditions exist; many retail companies will be doing remarkably well if conditions permit them to break even.

The recent announcement that anthracite egg will come to St. Louis was bad news to the dealer who has a supply of Arkansas, and gashouse and byproduct coke. It would have been hard to move the storage supplies of these fuels even if anthracite did not come in until after Apr. 1.

The country demand is extremely easy on both steam and domestic. What little coal is going out does so in scattered shipments.

In the Standard district the Baltimore & Ohio keep mines idle for four days on account of no cars. The Baltimore & Ohio and Louisville & Nashville seem to be stumbling blocks at this time. The Illinois Central shows some wonderful improvement, the other roads being about normal. There is a slight falling off in the showing made by the Iron Mountain in moving loads, and the Terminal seems to be slipping a few cogs in its ability to care of the business offered it.

The Standard field is in a deplorable condition. The operators in this region are unorganized, and incompatible. Some mines are unable to work on account of too much lump and egg, and a few miles away mines are idle because they cannot move the screenings though they have lots of orders for lump and egg. As long as the Standard operators continue to flounder around in this manner just so long will they continue to sell coal at below the cost of production. With mine-run costing between $1.50 and $1.60, the following prices prevail on Standard coal: 2-in. screenings, $1.25; 2-in. lump, $1.50; 6-in. lump and 2 x 6-in. egg, $1.75 up; all depending upon how much the operator can squeeze out of the buyer.

In the Mt. Olive district there is an abundance of coal and mines are idle, but everything is quiet and the operators seem to be able to handle the situation fairly well. They are maintaining their prices for the most part at $2.55.

Railroad tonnage is fairly good out of the Mt. Olive field, and the railroad tonnage in the Standard field is fair but not what it should be because the storage piles are being used up.

In the DuQuoin and Carterville fields there is at the present time an overproduction, but the railroads are helping out by buying.

There is practically no Arkansas coming in here now. Coke is a drug on the market at any price. About 100 cars of anthracite coal were ordered for St. Louis recently. This is all egg size, but none of it has arrived up to the present.

Ocean Shipping

FOREIGN FREIGHT RATES

W. W. Battie & Co.'s coal trade freight report for Jan. 20 states:

Steam—Havana, $7.50, 600 tons dis.; Cardenas or Sagua, $9, 300 tons dis.; Cienfuegos, $9, 500 tons dis.; Caibarien, $9.50, 300 tons dis.; Guantanamo, $8.50, 500 tons dis.; $9, 400 tons dis.; Manzanillo, $9.50, 300 tons dis.; Bermuda, $9.50, and Bermuda, p. c. and dis. free, 300 tons dis.; Kingston, $9.50, 400 tons dis.; St. Thomas, $10, 500 tons dis.; St. Lucia, $11, 500 tons dis.; Santiago, $8.50, 500 tons dis.; $9, 400 tons dis.; Barbados, $11, 500 tons dis.; Port of Spain, Trinidad, $11, 500 tons dis.; Curacao, $10.50, free p. c. Curacao, 500 tons discharge.

Sail (maximum)—Para, $15.50 net; Bahia, $18.50 net; Pernambuco, $18.50 net; Rio, $19.50 net; Santos, $19.50 net; Buenos Aires, $18.50 net; La Plata, $18.50 net; Montevideo, $19.50 net. (Gross rates $1.50 per ton in excess of net rates.) On all the foregoing rates, charterers pay vessel's towage to coal port. To Nitrate Rangs, $16.50 gross prepaid. (Same rate steam.)

The Chartering Committee's rate by steam is $19.50 net to Rio or Santos, $18.50 net to Buenos Aires and $19.50 net to Montevideo.

Export Notes

EXPORT LICENSES TO MEXICO

The War Trade Board announces that the regulations announced in W. T. B. B. 320, issued Nov. 19, 1918, to the effect that applications for export licenses to Mexico should have attached thereto the order from the consignee bearing the visé of an American consul, have been withdrawn. Orders for shipments to Mexico will no longer require such Consular visé and need no longer be attached to the application for export license.

EXPORTATION OF COAL

The War Trade Board announces that applications will now be considered for licenses to export coal to all destinations in Europe and to the Argentine and Uruguay. Applications should be filed in the regular way required for the filing of applications for the exportation of other commodities to the particular country. Licenses for the exportation of coal to the Argentine and Uruguay will provide as a condition thereof that the shipment must be consigned in care of the War Trade Board representative at Buenos Aires or Montevideo, as the case may be.

HAMPTON ROADS COAL EXPORTS

NORFOLK

				Cargo	Bunkers
Lamberts Point					
1- 2-19	Amer. S.S. Ameland	Rio de Janeiro		5,299	854
1- 2-19	Amer. S.S. Quistconck	Cristobal, C. Z		5,854	281
1- 2-19	Nor. S.S. Ottar	Havana, Cuba		1,453	158
1- 3-19	Amer. S.S. Lake Shawano	Havana, Cuba		2,440	407
1- 3-19	Amer. S.S. Lake Copley	San Juan, P. R		2,921	352
1- 4-19	Fr. Brk. Loire	Iquique, Chile		3,794	49
1- 4-19	Swed. S.S. Atland	Montevideo		6,420	1,415
1- 4-19	Br. S.S. Beltana	Montevideo		5,646	2,185
1- 3-19	Arg. S.S. Guardia Nacional	Buenos Aires		1,689	....
1- 7-19	Amer. S.S. Edward Pierce	Rio de Janeiro		5,603	1,133
1- 7-19	Am. Sch. Mabel Gale	Para, Brazil		1,193	787
1-10-19	Br. S.S. Frankinver	St. Vincent, C. V. I		6,033	1,360
1-10-19	Br. S.S. Clan Stuart	Montevideo		7,243	....
1-10-19	Br. Sc. Socony	Macoris, D. R		414	1,029
1-11-19	Nor. S.S. Hesperos	Antofagasta, Chile		7,313	....
Sewalls Point					
1- 3-19	Br. S.S. Ocean Transport	Las Palmas, G. C. I		6,191	1,320
1- 4-19	Amer. S.S. Lake Orange	Havana, Cuba		2,559	301
1- 4-19	Amer. S.S. Lake Callicoon	Havana, Cuba		2,559	....
1- 7-19	Amer. S.S. Mundelta	Havana, Cuba		6,181	....
1- 7-19	Amer. S.S. Point Bonita	Pearl Harbor, Hawaii		3,013	....
1-10-19	Jap. S.S. Ataka Maru	San Francisco, Cal		4,305	882
1-11-19	Jap. S.S. Indo Maru	San Francisco, Cal		5,748	601
1-11-19	Amer. S.S. Noord Brabant	Antofagasta, Chile		3,231	403
1-11-19	Br. S.S. War Syren	Las Palmas, G. C. I		4,933	1,169
1-11-19	Amer. S.S. Munaires	Buenos Aires, A. R		6,168	....

NEWPORT NEWS

1- 2-19	Du. S.S. Cornelis	Amsterdam, Holland		3,998	....
1- 2-19	Amer. Sc. Bayard Hopkins	Sanchez, D. R		351	....
1- 4-19	Br. S.S. Port Victor	Montevideo		6,674	2,961
1- 6-19	Dan. Bk. Thalassa	Rio de Janeiro		2,202	....
1- 7-19	Br. S.S. Adra	Las Palmas, G. C. I		6,644	862
1- 8-19	Nor. Bk. Audny	Rio de Janeiro		2,805	....
1- 9-19	Amer. S.S. Bonham	Havana, Cuba		3,677	....
1- 9-19	Swed. S.S. Hermes	Havana, Cuba		2,232	165
1- 9-19	Nor. S.S. Grove	Port of Spain, Trinidad		1,363	280
1-11-19	Dan. S.S. Henry Tegner	Nuevitas, Cuba		2,055	165